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WAGES AND HOURS IN AMERICAN INDUSTRY

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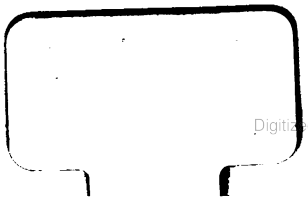
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Wages and Hours in American Industry

July, 1914—July, 1921

Research Report Number 45
December, 1921

National Industrial Conference Board

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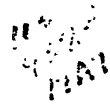

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National Industrial Conference Board

10 EAST 39TH STREET, NEW YORK CITY

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WAGES AND HOURS IN AMERICAN INDUSTRY

JULY, 1914—JULY, 1921

RESEARCH REPORT NUMBER 45
DECEMBER, 1921

National Industrial Conference Board

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FOREWORD

The readjustments now proceeding in American industry make accurate, comprehensive and scientifically analyzed information on changes in wages, hours, and the volume of employment of timely interest and importance to business men, students of economics, and the public generally.

To supply such information is the object of this report. It is the fourth of this nature published by this Board, much broader in scope than any of its predecessors, and more extensive than any wage survey heretofore made in this country. It presents reliable data portraying the hourly and weekly earnings, hours of plant operation and worker hours, as well as employment, from the pre-war period to the middle of 1921. It covers in special detail the period since June, 1920, when the prevailing depression began to show itself, and is therefore of great value in depicting the process of readjustment in the principal American industries during a period of declining business activity.

Recognizing the general interest in the relation between wages and the cost of living, the report presents also a comparison between changes in money wages for all industries and changes in the cost of living for the country as a whole, during the period studied, thus showing the trend of "real" wages, which is the purchasing power of money wages, from 1914 onward.

The present report rests on a broad and sound statistical foundation which will provide a basis for further studies by the Board of wages in American industry, and will make possible also a comparison with wage conditions in foreign countries.

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Wages and Hours in American Industry

July, 1914—July, 1921

INTRODUCTION

Scope of Investigation

The aim in this investigation was to present a picture of the trend of industrial conditions in the United States as reflected in wages, hours of work and employment. These three factors are inseparably linked together, and to discuss the question of wages without inquiry into hours and employment would yield incomplete results, both from a scientific and practical point of view. The data contained in this report, therefore, deal not only with wages, but also with the average hours of the nominal or standard week, the average weekly hours of plant activity, the average actual week per wage earner, and with fluctuations in full-time and part-time employment.

Three reports dealing with wages have already been issued by the National Industrial Conference Board. The first[1] study published by the Board included eight industries, the second[2] dealt with twelve, and the third[3] with fifteen separate industries.

The present report covers 23 major industries. Returns were received from 4,398 plants, employing 1,247,650 wage earners at the general height of industrial activity in 1920. Schedules were received from many other plants, but these were not sufficiently complete to warrant their inclusion in this report. The selection of industries was guided by the most recent United States Census of Manufactures and was in part determined by the availability of data. Industries

[1] Research Report No. 20. "Wartime Changes in Wages: September, 1914—March, 1919."

[2] Research Report No. 31. "Changes in Wages During and Since the War: September, 1914—March, 1920."

[3] Research Report No. 35. "Wage Changes in Industry: September, 1914—December, 1920."

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were chosen which were representative of the manufacturing activities of the country. The clothing industry was not included because its sliding scale of wage payments, its mixture of per diem and piece rates, and its seasonal fluctuations, made the gathering of satisfactory data impracticable at this time. For similar reasons, a few other representative industries could not be included.

Wage movements are not necessarily best reflected by data gathered from a great number of plants, but rather by data from sources that are truly representative of industrial conditions. The 1919 Census of Manufactures lists over 80,000 industrial establishments in the industries covered by this report. Over 5,000 of these establishments furnished information, and the plants included in this report employed about 30 per cent of the total wage earners in all 80,000 plants.

Period Covered by Report

The data cover the period from July, 1914 up to July, 1921, and present an authentic record of wage changes in this period, gathered from comparable sources. The periodic wage studies conducted by the United States Bureau of Labor Statistics are from sources that are mainly non-identical. The single available source of continuing information on wage fluctuations from June, 1914 to the present, that of the New York Industrial Commission[1], reflects conditions in only one state.

July, 1914 has been selected as the base for the study because this date immediately precedes the period affected by the outbreak of the World War. It reflects American industry, in general, under fairly normal conditions. In some industries that period was a time of depression or seasonal stagnation, but on the whole, July, 1914 can be considered as the normal and standard basis for comparison with war and post-armistice conditions, whether economic, industrial or social.

The period from 1914 to the middle of 1920 was characterized by an advance from normal business activity to supernormal production, stimulated by the Great War. Industry reached the high-water mark in the middle of 1920, although

[1] *Labor Market Bulletin.*

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in some industries deflation had already started in the spring months of that year.

No attempt has been made to study the character of the rise from the base in 1914 to the general peak in 1920. The results of such an investigation would be largely of academic interest. Today the principal need is to show the trends from the peak to the present, and to relate the existing situation to that of the pre-war period. To meet this need, this report shows the flow of wages, hours of work and employment, month by month from June, 1920 up to July, 1921, related to the common base of July, 1914.

Approximately three-quarters of the usable schedules which form the basis of this report give complete data from July, 1914 up to July, 1921. The remainder are from plants that could not furnish July, 1914 data, but did compile returns for the period 1920-1921. This group contained many firms in existence in 1914, but whose payroll records from 1914 to 1920 were unobtainable, and also firms that had started in business after 1914. It was felt that to eliminate from the report the group which supplied only 1920-1921 data would omit valuable information.

The problem, therefore, was to relate the data from the 1914-1921 group with those from the 1920-1921 group of firms. In regard to weekly and hourly earnings, the average week per wage earner, the average week of plant operation and the hours of the nominal week, careful tabulation showed little divergence between the data for the two groups, covering the period from June, 1920 up to July, 1921. It seemed justifiable, therefore, to tie together the two groups for 1920-1921. For this reason, the actual and index base for hours and earnings, furnished by the 1914-1921 group of firms, has been taken as the base for the entire 1920-1921 group. As explained later in this report, a different method was applied to employment data.

The fact that three-quarters of the material covers the entire period, assures a predominant base which is sufficient to outweigh any errors that might accrue by tying in a smaller group at June, 1920. In other words, the statistical method pursued has not involved changing the base or a greater part of the base between different periods.

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Classification of Wage Earners

This investigation deals only with the wage-earning group, and does not include executives, office and sales force, foremen or assistants, if paid on a salary basis, or clerical workers.

As in previous wage studies conducted by the Conference Board, data are classified first by sex. Male wage earners are then divided into the two general groups of "common or unskilled" labor and "all other" labor. "Common or unskilled" labor is defined as that for which no previous training is required—the general labor that performs the cruder "muscle" tasks. "All other" labor is composed of semi-skilled and skilled labor of all kinds—the group that must have had some training for their jobs. It contains all kinds of workers, from those who classify just above the rank of common laborers to the most highly skilled wage earners. The dividing line between these groups is difficult to determine, yet, on the whole, there is a general understanding as to the distinction implied by these terms. In the charts and tables contained in this report, the word "skilled" refers to the male workers in the "all other" group.

An attempt was made in this investigation to ascertain wage rates as well as earnings for each of the principal occupational groups in each industry. It was found, however, that with regard to the classification of occupations and to occupational nomenclature, there was no general agreement between plants in the same industry, or between different industries using substantially the same kind of labor. The attempt had, therefore, to be abandoned.

Treatment of Wage Data

This report deals with "money wages," which are to be distinguished from "real wages", or the purchasing power of money wages. Wherever "earnings" is used, it means total wages derived from labor services.

Hourly, as well as weekly earnings, for each of the three classes in each industry, are included in the present investigation. Hourly earnings are obtained by dividing the weekly payroll in money for each group of wage earners by the total actual hours worked by each group; weekly earnings are obtained by dividing the weekly payroll in money by the total

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number of persons in each group of wage earners. The wage data have been given in tables and charts both in index numbers, and in dollars and cents which picture actual conditions. The index numbers show the rate of increase and decrease from various points, and they further reflect the relative importance of wage changes in the different groups.

Treatment of Employment Data

While the 1914-1921 and 1920-1921 groups were consolidated in showing trends of earnings and hours, such a procedure in regard to employment data was considered statistically incorrect. The base furnished by the 1914-1921 group of establishments could be used as the base for trends in earnings and hours for all establishments, but this base could not be used for all establishments in regard to employment. Here the problem deals with actual numbers rather than with trends, and to use the base of a smaller group as the base for the whole group would lead to wrong conclusions. Consequently the employment data for the total and for the three classified groups individually are shown for the 1920-1921 period only. Additional information, covering the establishments from which data for 1914-1921 were available, is also included on the employment charts.

Treatment of Data on Hours of Work

The report covers three kinds of data regarding hours of work: (1) the average actual week per wage earner, (2) the average actual week of plant operation, (3) the nominal or standard work week.

"The average actual week per wage earner" is obtained by dividing the total man or worker hours of each group by the number of workers employed in that group. In consolidating this information from individual plants into data for an industry, the number of wage earners in each plant was taken into account, thereby securing a weighted average for each industry.

"The actual week of plant operation" is the average of the hours of operation of all the plants covered in a specific industry. The figure is obtained by multiplying the total number of wage earners in each plant by the hours of opera-

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ion of that plant, and then dividing the sum of these totals by the total number of wage earners, thus combining these data into an average for the industry. This gives the properly weighted hours of plant operation for an industry.

The "nominal or standard work week" in a plant is the number of hours which the plant is supposed to operate. The hours of the nominal week are determined not so much by the size of the individual establishment as by the prevailing hours within the industry, or by a collective contract between management and employees. The nominal week for an entire industry has been ascertained by taking the average of the nominal weeks in all the establishments of that industry. This average has not been weighted in relation to the number of plant employees, because the object is to ascertain the average week for the *plants* in the industry rather than for the *workers* in the plants.

The comparison between the average hours per individual wage earner and the actual week of plant operation shows the divergence between the hours that all the wage earners have actually worked and the hours that the plant has actually operated. It measures the inefficiency of plant operation due to any or all causes. In addition, the comparison between the actual week of plant operation and the nominal week reflects broadly the economic condition of the industry.

In determining the actual week of plant operation, full account was taken of the time lost due to local and legal holidays, and to local and temporary plant disabilities. Losses due to these causes are not to be attributed to economic and industrial conditions, but to temporary and local circumstances. To compute average weekly hours and earnings on the basis of a week that has been reduced through a cause not related to conditions governing working time in the industry, would result in lowering the average so that it would not be representative or typical of other weeks in the month. On this account the wage schedule requested representative weeks which were, as far as possible, unaffected by legal and local holidays. Where such holidays occurred, the time lost was added to the hours of actual plant operation and to the average actual week per wage earner, and the normal week of hours and earnings was thus established.

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SUMMARY AND GENERAL CONCLUSIONS

The present wage investigation, covering the interval from July, 1914 to the middle of 1921, deals with an especially interesting period of American industry. Starting from a pre-war base, the study reflects the tremendous expansion in many manufacturing industries under pressure of war stimulation and post-war demands, followed by the industrial depression which developed in the spring of 1920 and has since continued in most industries. The period of deflation has been one of wide fluctuations, characterized by general wage reductions, unemployment, part-time operation, and curtailment of production.

The general results of the investigation are dealt with under five headings:

A. Composite data for all industries.
B. Comparison of data between industries.
C. Comparison of data between classified groups in all industries.
D. Comparison of composite hourly and weekly earnings with the cost of living.
E. General conclusions.

A. Composite Data for All Industries

Not all of the material presented in the twenty-six separate industrial sections is included in the composite results. Data from gas and electric light and power companies are not used, as conditions in these public utilities are not quite comparable with those in other manufacturing industries. Wages and rates are generally determined by local or state legislation, and the conditions in these industries require continuous operation, making an accurate record of hours of little value. Further, of the seventy iron and steel plants from which returns were received, data from sixteen plants have not been included in the composite returns, because the payroll records of these plants did not give classified data. Moreover, their inclusion in the composite results would not have materially altered these results. The composite returns in

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this section, therefore, include only 4,084 plants, employing 1,200,000 wage earners in the aggregate, while in discussing general results relating specifically to earnings, employment and hours, the number of plants and wage earners covered is designated in each case.

Wages

(a) *Hourly earnings:* The compilation of data on hourly earnings does not include returns from boot and shoe establishments [1] in addition to the gas and electric plants and certain iron and steel companies already mentioned. The composite hourly earnings for all industries, therefore, include data from only 3,973 plants. Women were employed in 1,717 of these plants.

Composite hourly earnings of all wage earners increased 156% between July, 1914 and September, 1920. The decline from the latter period to the middle of 1921 amounted to 16.5%. At that time, the net increase over July, 1914 was 114%. The actual decrease in money in average hourly earnings for all wage earners from June, 1920 up to July, 1921 amounted to $.09½.

The trend shows a well-sustained level to the end of 1920. Beginning in January, 1921, sharp declines occurred, which increased throughout the entire first six months of the year.

By September, 1920 the hourly earnings of common labor had increased 163% over July, 1914. In the same month, those of skilled labor showed an increase of 149%, while the high point of hourly earnings for women was reached in June, 1920, when there was an increase of 171% over the 1914 level.

The percentages of decline for the three groups from the peak months up to July, 1921 were as follows: common labor, 17.3%; skilled labor, 15.2%; women, 14.6%. Relatively, the amount of decline for women was less than that for the male group.

The percentages of increase in June, 1921 over 1914 for the three groups were respectively, 117%, 111% and 131%.

Between June, 1920 and the end of June, 1921, the hourly earnings of common labor declined $.084, those of skilled labor $.097, and those of women, $.061.

The general tendency in the trends for the individual groups

[1] Data on hourly earnings were not received from a sufficient number of boot and shoe establishments to warrant their inclusion in the composite results. See p. 13.

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TABLE A

AVERAGE HOURLY EARNINGS

COMPOSITE OF ALL INDUSTRIES CLASSIFIED BY GROUPS, WITH COMPOSITE OF ALL WAGE EARNERS

PERIOD	ALL WAGE EARNERS		MALE UNSKILLED			MALE SKILLED			WOMEN		
One Week In	Composite Hourly Earnings	Index No. Composite Hourly Earnings	No. Wage Earners	Average Hourly Earnings	Index No. Average Hourly Earnings	No. Wage Earners	Average Hourly Earnings	Index No. Average Hourly Earnings	No. Wage Earners	Average Hourly Earnings	Index No. Average Hourly Earnings
*1914**											
July	*$.244*	*100*	*141,383*	*$.206*	*100*	*364,027*	*$.282*	*100*	*91,443*	*$.154*	*100*
*1920***											
June	.616	252	273,771	.532	258	694,317	.692	245	160,072	.417	271
July	.616	252	275,633	.537	261	685,788	.693	246	158,246	.412	268
August	.618	253	273,232	.540	262	665,524	.693	246	152,490	.410	266
September	.624	256	263,415	.542	263	652,097	.702	249	150,983	.415	270
October	.621	254	249,350	.538	261	618,402	.698	248	142,759	.414	269
November	.615	252	228,856	.531	258	586,862	.690	245	133,621	.411	267
December	.609	250	207,755	.526	255	545,804	.683	242	123,847	.404	262
1921											
January	.584	239	184,007	.502	244	500,448	.659	234	115,998	.377	245
February	.568	233	179,974	.489	237	482,645	.645	229	116,578	.365	237
March	.550	225	178,563	.471	229	472,329	.627	222	117,428	.362	235
April	.539	221	171,806	.464	225	458,656	.614	218	118,186	.357	232
May	.531	218	164,007	.456	221	439,459	.607	215	119,366	.357	232
June	.521	214	157,547	.448	217	421,192	.595	211	115,898	.356	231

* Includes 2,884 establishments furnishing 1914-21 data. See pp. 3, 5.
** Includes 3,973 establishments furnishing 1920-21 data. See pp. 3, 5.

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CHART A: AVERAGE HOURLY EARNINGS, ALL INDUSTRIES, JULY, 1914 UP TO JULY, 1921.

(National Industrial Conference Board)

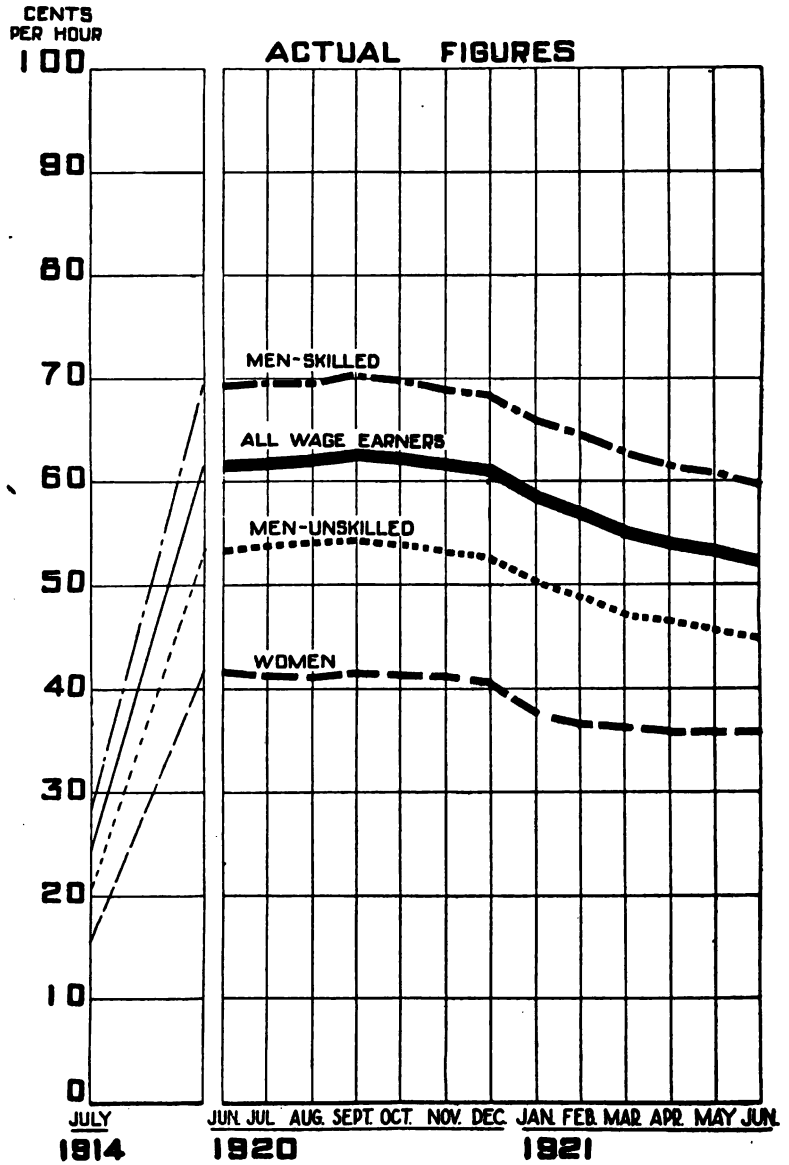

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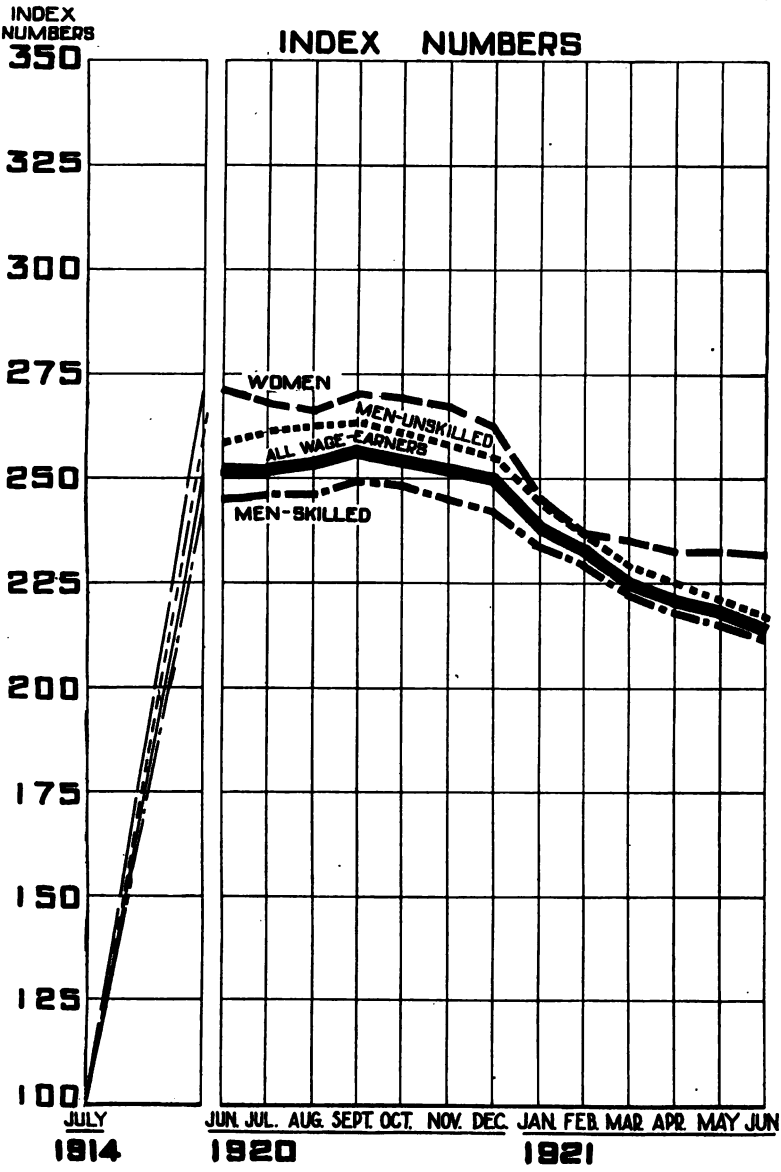
CHART B: AVERAGE HOURLY EARNINGS, ALL INDUSTRIES, JULY, 1914 UP TO JULY, 1921.

(National Industrial Conference Board)



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of weekly earnings for women was reached in April, 1921, when there was a decline of 17.2% from the peak.

The general tendencies noted in composite weekly earnings apply for each of the three groups, the general high levels of the groups being maintained through 1920, with slight declines occurring toward the close of the year, except for women, and with sharp reductions continuing during the first six months of 1921. The effect of part-time operation on the earnings of the male group, particularly common labor, has been predominant.

The decline in weekly earnings has been far more extensive than in hourly earnings, due chiefly to part-time operations, plant shutdowns and part-time employment. Wage trends indicate well-sustained levels in basic industries through 1920 with sharp reductions occurring in the winter months of 1920-1921. The spring months of 1921 were characterized by continued declines, though they were not so severe as in the previous months. In the three classified groups, male common and skilled labor suffered far more severe reductions than women. In comparison with 1914, wage levels for women in 1921 show the greatest net increases. This may be partially accounted for by the progress which women made during the war, through legislation and otherwise, in bringing their wage levels nearer to those of men. On the whole, this wage investigation shows that wage decreases were general throughout American industry.

Employment

Composite data on employment include returns from 4,084 establishments. Women were employed in 1,827 of these plants.

The total employment in all industries decreased 37.1% from June, 1920, generally the peak of industrial activity, up to July, 1921. The trend shows fairly well sustained conditions through October, 1920. Slight reductions occurred in November and extensive lay-offs took place in December, 1920. The unemployment situation began to be severe in the opening months of 1921 and gradually became worse through the first six months of the year. The large amount of decline in the metal working trades, building materials manufacturing,

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CHART E: EMPLOYMENT, ALL INDUSTRIES, JULY, 1914 UP TO JULY, 1921

(National Industrial Conference Board)

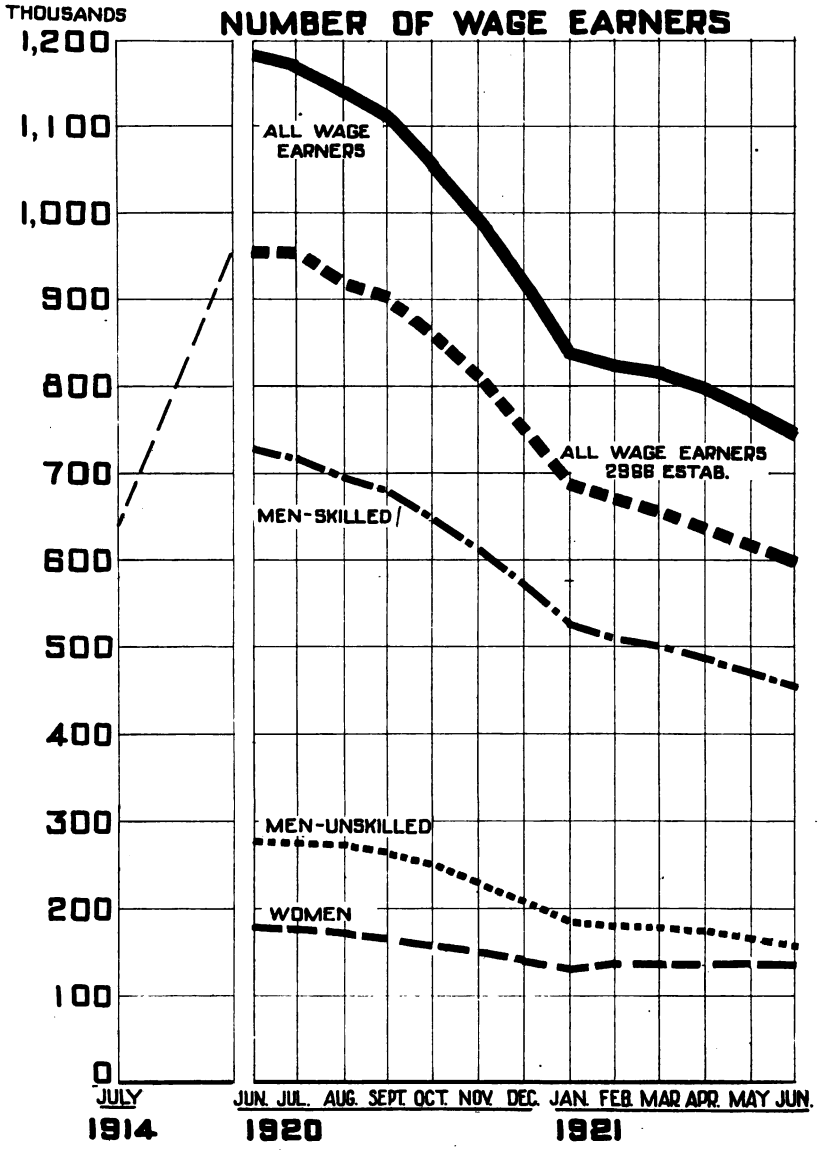

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TABLE C

EMPLOYMENT

COMPOSITE AND CLASSIFIED EMPLOYMENT IN 24 INDUSTRIES

PERIOD	NUMBER WAGE EARNERS EMPLOYED				
	Composite		Classified		
One Week In	Total 1914-21 Establ.	Total 1920-21 Establ.	Male Unskilled	Male Skilled	Women
1914					
July	*638,531*	*638,531*	*142,283*	*389,587*	*106,661*
1920					
June	954,438	1,185,611	275,059	729,185	181,367
July	954,627	1,170,950	276,621	717,048	177,281
August	918,777	1,141,270	274,353	696,072	170,845
September	902,149	1,112,802	264,436	680,806	167,560
October	857,754	1,054,632	250,220	645,316	159,096
November	808,558	990,875	229,718	612,540	148,617
December	750,318	918,428	208,629	570,776	139,023
1921					
January	687,350	838,230	184,873	523,452	129,905
February	671,987	823,218	180,981	509,508	132,729
March	658,709	814,242	179,650	500,031	134,561
April	637,998	795,457	172,871	486,884	135,702
May	619,292	772,092	165,113	468,873	138,106
June	598,226	745,703	158,683	451,715	135,305

2,966 establishments furnished 1914-21 data.
4,084 establishments furnished 1920-21 data.

and rubber manufacturing, overbalanced the generally sustained levels in the textile industries.

Employment of common labor declined 42.3% from June, 1920 up to July, 1921, and was the most severely affected group during the depression period. Skilled labor declined 38.1% from June, 1920 up to July, 1921, while women were the least affected, with a decline of 25.4% during the same period. The trough period of employment for women was reached in January, 1921, when there was a decline of 28.4% from the peak. Between January and June, 1921, there was an increased employment of women amounting to approximately 4%. This may be accounted for by the return of women wage earners employed on piece-work in the textile industries and in boot and shoe manufacturing.

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In the 2,966 establishments which furnished complete data from July, 1914 up to July, 1921, total employment increased 49.5% between July, 1914 and June, 1920. The percentage of decline in these establishments from June, 1920 up to July, 1921 was 37.3%. In other words, in June, 1921, the industrial depression had forced employment in the same establishments 6.3% below the level of July, 1914.

Hours

No composite data are presented in regard to the *average hours of the nominal week*. Composite nominal hours in 26 industries of divergent character would portray little that is valuable for comparison.

The *actual week of plant operation* has been compiled for all industries except the three industries whose normal method of production is on a two or three shift basis. This group includes the chemical industry, iron and steel manufacturing and paper and wood pulp mills. The average hours of plant operation were compiled from 3,825 establishments. Women were employed in 1,728 of these plants.

The composite actual week of plant operation in all industries shows a reduction from 53.7 hours in July, 1914 to 50 hours in June, 1920. Plant activity continued on a well-sustained level through September, 1920. In October a slight decline occurred, followed by large reductions at the close of the year. The beginning of 1921 was characterized by severe depression in plant activity, the level being below 45½ hours, or a loss of over 4½ hours from June, 1920. The trough period of 44.6 hours was reached in April, 1921. May witnessed a strong revival to 45.9 hours, which was probably due to increased activity in metal trades and textiles. A decline occurred again in June, 1921.

The trend of plant hours clearly reflects the condition of American manufacturing industries from 1914 to the middle of 1921. There was a general reduction of the length of working hours in all industries between 1914 and 1920, while the plant hours were steadily reduced during the depression period. The general trend of plant operation has been closely followed by the trend in the hours of the actual week per wage earner.

The composite *average actual week per wage earner* was compiled from all industries except public utilities, boot and shoe manufacturing and 16 iron and steel plants, which did not

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TABLE D

AVERAGE HOURS OF WORK

CLASSIFIED AND COMPOSITE HOURS OF THE AVERAGE WEEK PER WAGE EARNER, AND COMPOSITE PLANT HOURS

PERIOD	ACTUAL WEEK PER WAGE EARNER				PLANT HOURS
	Classified			Composite	
One Week In	Male Unskilled	Male Skilled	Women		
1914					
July	*53.0*	*50.6*	*49.8*	*51.1*	*53.7*
1920					
June	50.4	49.1	45.0	48.9	50.0
July	50.6	49.0	44.9	48.8	50.0
August	50.2	49.0	44.3	48.7	49.8
September	49.9	48.4	44.5	48.2	49.4
October	49.7	48.5	43.8	48.1	48.9
November	48.5	47.2	41.9	46.8	47.7
December	47.2	46.2	41.1	45.7	46.5
1921					
January	45.4	44.3	41.3	44.1	45.4
February	44.8	44.0	42.2	43.9	45.4
March	45.2	43.8	42.5	44.0	45.3
April	44.7	43.5	42.4	43.6	44.6
May	45.0	43.8	43.5	44.0	45.9
June	45.0	43.6	43.5	43.9	45.5

2,884 establishments furnished 1914-21 data on Actual Week per Wage Earner
3,973 establishments furnished 1920-21 data on Actual Week per Wage Earner.
2,798 establishments furnished 1914-21 data on Plant Hours.
3,825 establishments furnished 1920-21 data on Plant Hours.

contribute hourly data. The total compilation of the average week per wage earner included 3,973 establishments. Women were employed in 1,717 of these plants.

The average actual week per wage earner in all industries showed a decline from 51.1 hours in July, 1914 to 48.9 hours in June, 1920. The latter level was well sustained through October, when the decrease in plant activity began to affect working hours, there being a decrease in November to 46.8 hours. In December there was a further decline to 45.7 hours. The beginning of 1921 marked a still further reduction to 44.1 hours and the depression period continued to the trough in April of 43.6 hours. A revival occurred in May, followed again by a slight depression in June. In June, 1921, the average wage earner was working exactly

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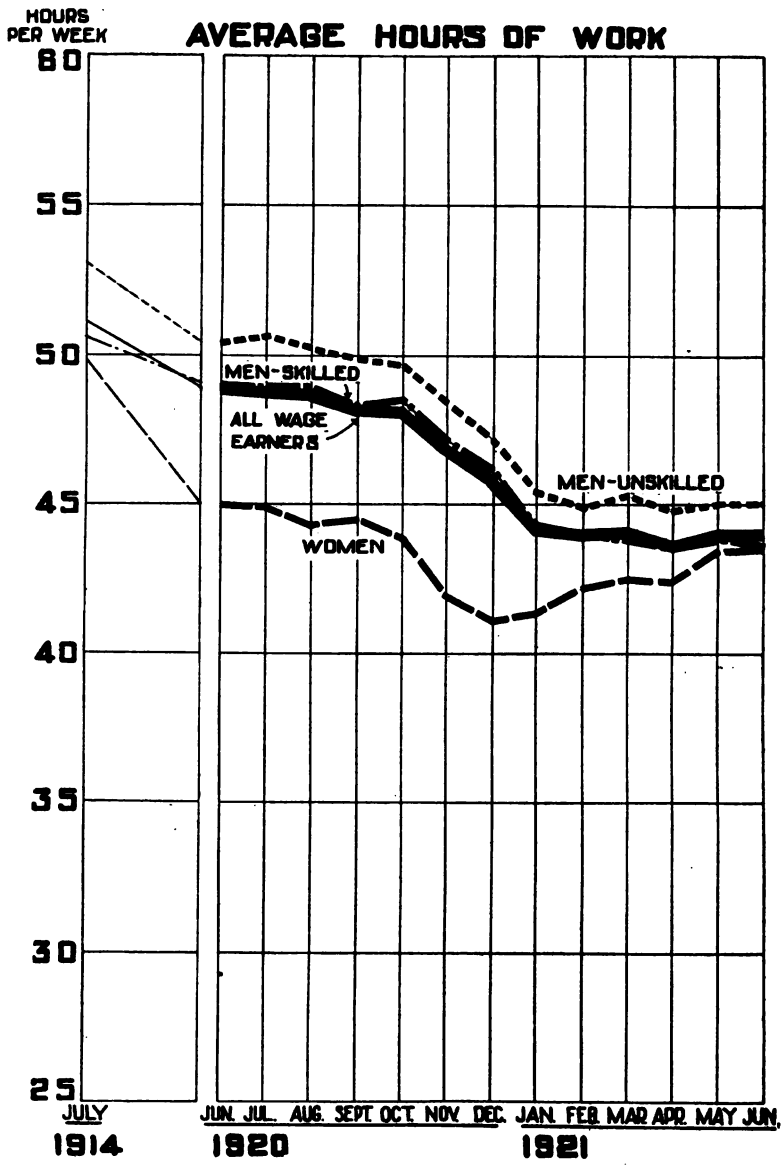
CHART F: AVERAGE HOURS OF WORK, ALL INDUSTRIES, JULY, 1914 UP TO JULY, 1921.

(National Industrial Conference Board)



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five hours less than in the preceding June, this constituting a loss of approximately 10.2%. This great decline in working hours may be accounted for directly by the industrial depression, and naturally has caused an extensive reduction in weekly earnings.

In the three groups, the average week per *unskilled* wage earner in 1914 was 53 hours. In June, 1920 they had decreased to 50.4 hours. In June, 1921 the *unskilled* wage earner was working only 45 hours per week. In July, 1914 the average *skilled* wage earner was working 50.6 hours. In June, 1920 the hours had declined to 49.1, while in June, 1921 the hours had fallen to 43.6. The loss of 5.5 hours suffered by the *skilled* wage earner between June, 1920 and June, 1921 shows that the skilled class has been even more severely affected by the industrial depression than male common labor or women. In July, 1914 the average *woman* wage earner was working 49.8 hours. In June, 1920 the hours had decreased to 45 per week, while in June, 1921 they were 43.5 hours. The depression period for *women* wage earners occurred in December, 1920, when there was a drop to 41.1 hours. The hours of *women*, therefore, have increased since the beginning of 1921 and they are the only group to show a sustained recovery from a trough period. *Women have been less affected by decline in working hours than men.*

B. Comparison of Data Between Industries

Wages

The comparison of wages between industries is presented in bar diagrams showing the percentage increases in hourly and weekly earnings in June, 1921, over July, 1914. In addition, the percentage of decline from June, 1920 up to July, 1921, is also designated.

(a) *Hourly earnings:* The greatest net increase in hourly earnings in June, 1921 over July, 1914, occurred in the *textile group.* In June, 1921 the wool industry showed an increase of 153% over July, 1914, while northern cotton mills showed a percentage increase of 142% and southern cotton mills of 120%. Hourly earnings in silk increased 128% and in hosiery manufacturing 121%.

In the *metal trades* the increases range from 112% in iron and

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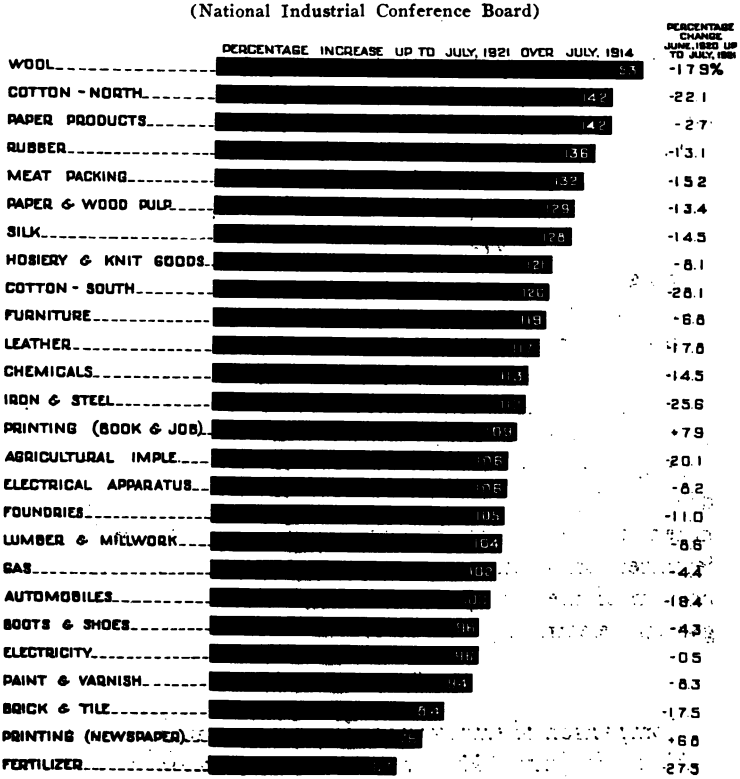
steel to 100% in automobiles. The whole metal industry shows a level of approximately 105% increase over 1914. It can be seen readily that this level is below that of the textile industries.

Rubber and *meat packing* show large increases of 136% and 132% respectively. In *paper manufacturing* the net levels were also high, amounting to 129% in paper and wood pulp and 142% in paper products.

Boots and shoes, newspaper printing, brick and tile, paint and varnish, and gas and electric light plants show comparatively small increases in hourly earnings.

(b) *Decline in hourly earnings:* Generally speaking, the largest amount of decline between June, 1920 and June,

CHART G: PERCENTAGE INCREASES IN AVERAGE HOURLY EARNINGS UP TO JULY, 1921, OVER JULY, 1914, AND PERCENTAGES OF CHANGE FROM JUNE, 1920, UP TO JULY, 1921, BY INDUSTRIES.
(National Industrial Conference Board)



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1921 occurred in the industries which showed the largest increases between July, 1914 and June, 1920. This is particularly true of the textile group, where reduction in hourly earnings has ranged from 8.1% in hosiery factories to 28.1% in southern cotton mills. Similarly, in the metal trades a large amount of expansion has been followed by a large amount of contraction. The declines range from 8.2% in electrical apparatus manufacturing to 25.6% in iron and steel plants. Foundries and machine shops, the largest single basic group in the entire study, show a decrease of 11%. Extensive decreases in hourly earnings have been noted also in meat packing, leather, brick and tile manufacturing, while those in boots and shoes, furniture, paper products, and gas and electric light plants, were below the general level of reductions.

(c) *Weekly earnings:* The increases in average weekly earnings in June, 1921 over July, 1914 ranged from 128% in wool to 49% in fertilizer manufacturing. As in the case of hourly earnings, the textile group, as a whole, show the greatest increases. Among other industries may be mentioned furniture, 105%; leather, 99%; boots and shoes, 98%; gas, 98%; book and job printing, 97%; and meat packing, 97%.

Part-time operations forced many industries toward low levels of weekly earnings, although the average hourly earnings were sustained at high levels.

(d) *Decline in weekly earnings:* As in the case of hourly earnings, the largest amount of decrease in weekly earnings took place in those industries where there were the largest increases during war-time production. There was a net increase of 107% in northern cotton mills in June, 1921, while the decline from June, 1920 up to July, 1921 amounted to 28.4%. Large decreases are noted in the metal trades, such as agricultural implement manufacturing, 37%, foundries, 26%, and automobiles, 24.2%. Large decreases were noted also in northern and southern cotton mills and in fertilizer, brick and tile, and paper manufacturing. At the bottom of the list appear boot and shoe manufacturing and gas and electric light companies.

Employment

Comparison of employment in various industries from June, 1920 up to July, 1921, shows that unemployment has been

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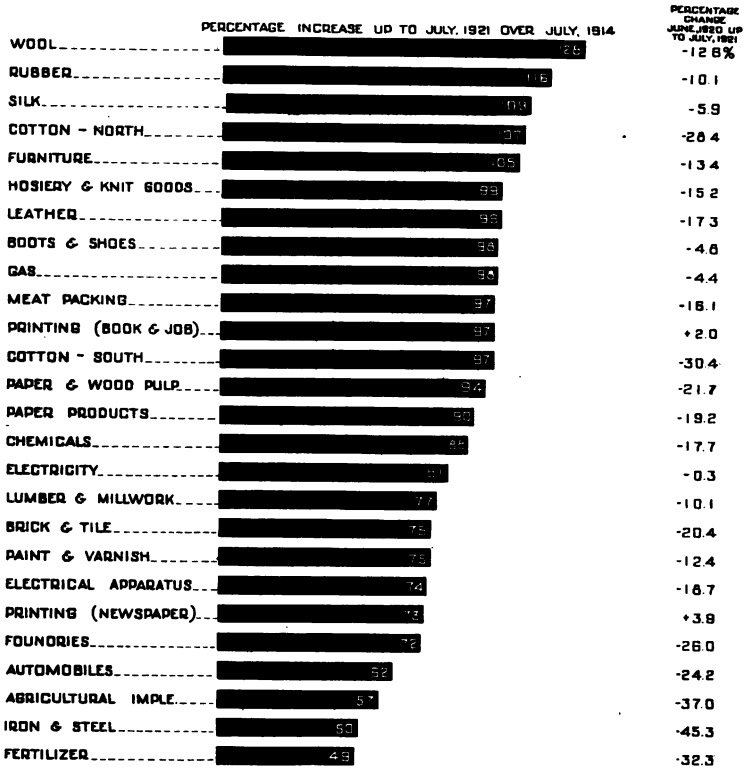
CHART H: PERCENTAGE INCREASES IN AVERAGE WEEKLY EARNINGS UP TO JULY, 1921, OVER JULY, 1914, AND PERCENTAGES OF CHANGE FROM JUNE, 1920 UP TO JULY, 1921, BY INDUSTRIES.

(National Industrial Conference Board)



more general in the metal trades than in any other group. The percentages of decline in this group range from 65.8% in agricultural implement manufacturing to 35.7% in electrical apparatus plants.

Employment in the rubber industry dropped 54%, while in chemicals the decline was 45%. The number employed in paper and wood pulp mills declined 48.3%, chiefly due to labor conditions in May and June, 1921.

The textile industry was less affected by the drop in employment than any other group. Declines ranged from 14.2% in northern cotton mills to 5.3% in southern cotton mills, while *increases* were noted in silk and wool of 3% and 4.3%

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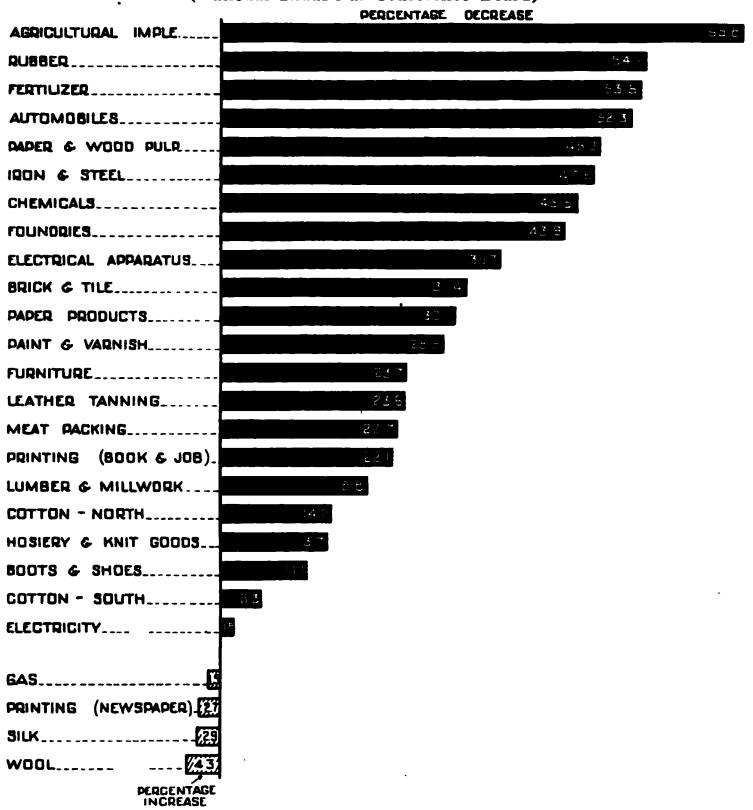
respectively. Newspaper printing also showed an increase of 2.7%, while gas and electric plants were little affected by general economic conditions. The composite decline of the entire metal group amounted to 46%, while that of the textile group amounted to only 5.8%.

CHART J: PERCENTAGES OF CHANGE IN EMPLOYMENT FROM JUNE, 1920 UP TO JULY, 1921, BY INDUSTRIES

(National Industrial Conference Board)



C. Comparison of Data Between Classified Groups in all Industries

Tables E and F are a recapitulation of material included in the separate industrial sections and are valuable for comparing actual wages paid for the same type of labor in different industries.

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Changes in Actual Hourly Earnings Classified by Groups and Industries

INDUSTRY	MALE UNSKILLED				MALE SKILLED				WOMEN			
	July, 1914	Peak	June, 1921	Decline from Peak	July, 1914	Peak	June, 1921	Decline from Peak	July, 1914	Peak	June, 1921	Decline from Peak
Metal Trades												
I. Foundry and Machine Shop Products	$.217	$.553	$.467	—15.6%	$.303	$.707	$.612	—13.4%	$.145	$.389	$.331	—14.9%
II. Automobile Manufacturing	.226	.585	.487	—16.8%	.312	.772	.626	—18.9%	.252	.430	.353	—17.9%
III. Agricultural Implement Manufacturing	.217	.584	.459	—21.4%	.280	.745	.575	—22.8%	.166	.488	.382	—21.7%
IV. Electrical Apparatus Manufacturing	.220	.561	.482	—14.1%	.299	.698	.615	—11.9%	.169	.410	.349	—14.9%
V. Iron and Steel Manufacturing	.185	.527	.395	—25.0%	.266	.815	.572	—29.8%	....	....	....	.....
Textiles												
VI. Cotton Manufacturing												
(a) Cotton Manufacturing (North)	.165	.486	.378	—22.2%	.195	.611	.483	—20.9%	.151	.476	.360	—24.4%
(b) Cotton Manufacturing (South)	.100	.332	.223	—32.8%	.142	.486	.323	—33.5%	.114	.340	.234	—31.2%
VII. Wool Manufacturing	.187	.553	.445	—19.5%	.211	.657	.545	—17.0%	.159	.494	.401	—18.8%
VIII. Silk Manufacturing	.201	.523	.448	—14.3%	.243	.637	.543	—14.8%	.153	.426	.363	—14.8%
IX. Hosiery and Knit Goods	.162	.488	.396	—18.9%	.241	.618	.525	—15.0%	.159	.397	.350	—11.8%
X. *Rubber*	.217	.587	.501	—14.7%	.292	.790	.673	—14.8%	.185	.447	.384	—14.1%
Leather and Boots and Shoes												
XI. Leather Tanning	.201	.521	.430	—17.5%	.237	.633	.516	—18.5%	.142	.426	.309	—27.5%
XII. Boot and Shoe Manufacturing	.182	.443	.355	—19.9%	.306	.644	.603	— 6.4%	.191	.444	.389	—12.4%
XIII. *Meat Packing*	.182	.545	.452	—17.1%	.259	.664	.563	—15.2%	.128	.434	.351	—19.1%
Chemicals and Paints												
XIV. Chemicals												
(a) Chemical Manufacturing	.217	.574	.472	—17.8%	.276	.659	.569	—13.7%	.133	.340	.296	—12.9%
(b) Fertilizer Manufacturing	.192	.448	.291	—35.0%	.223	.583	.464	—20.4%	....	....	....	.....
XV. Paint and Varnish Manufacturing	.252	.551	.502	— 8.9%	.351	.710	.635	—10.6%	.179	.367	.358	— 2.5%
Paper and Printing												
XVI. Paper Manufacturing												
(a) Paper and Wood Pulp Manufacturing	.207	.558	.462	—17.2%	.260	.648	.567	—12.5%	.136	.398	.342	—14.1%
(b) Paper Products Manufacturing	.190	.550	.466	—14.9%	.258	.647	.611	— 5.6%	.149	.359	.353	— 1.7%
XVII. Printing and Publishing (Book and Job)	.195	.465	.441	— 5.2%	.395	.802	.800	— 0.2%	.157	.371	.366	— 1.3%
XVIII. Printing and Publishing (Newspaper)	.293	.569	.514	— 9.7%	.460	.818	.818	.....	.195	.432	.420	— 2.8%
Building Materials and Furniture												
XIX. Lumber and Millwork	.191	.451	.377	—16.4%	.299	.662	.592	—10.6%	....	....	....	.....
XX. Furniture Manufacturing	.168	.473	.403	—14.8%	.247	.613	.538	—12.2%	.148	.356	.310	—12.9%
XXI. Brick and Tile Manufacturing	.220	.544	.410	—24.6%	.296	.665	.540	—18.8%	....	....	....	.....
Public Utilities												
XXII. Distribution and Generation of Electricity	.239	.505	.464	— 8.1%	.288	.588	.564	— 4.1%	....	....	....	.....
XXIII. Manufacture and Distribution of Gas	.208	.541	.477	—11.8%	.318	.613	.588	— 4.1%	....	....	....	.....

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TABLE F

CHANGES IN ACTUAL WEEKLY EARNINGS CLASSIFIED BY GROUPS AND INDUSTRIES

INDUSTRY	MALE UNSKILLED				MALE SKILLED				WOMEN			
	July, 1914	Peak	June, 1921	Decline from Peak	July, 1914	Peak	June, 1921	Decline from Peak	July, 1914	Peak	June, 1921	Decline from Peak
Metal Trades												
I. Foundry and Machine Shop Products	$11.14	$27.85	$19.90	—28.5%	$14.76	$34.57	$25.32	—26.8%	$7.11	$18.11	$13.14	—27.4%
II. Automobile Manufacturing	12.47	28.85	20.84	—27.8%	16.61	36.92	27.35	—25.9%	11.99	19.29	14.72	—23.7%
III. Agricultural Implement Manufacturing	11.22	29.43	18.00	—38.8%	14.47	36.28	22.68	—37.5%	8.11	23.49	15.41	—34.4%
IV. Electrical Apparatus Manufacturing	11.33	27.43	21.20	—22.7%	14.74	33.66	25.90	—23.1%	8.24	18.53	13.77	—25.7%
V. Iron and Steel Manufacturing	11.11	32.49	18.43	—43.3%	14.45	47.14	22.12	—53.1%	.....	.....	.....	.....
Textiles												
VI. Cotton Manufacturing												
(a) Cotton Manufacturing (North)	8.80	24.98	18.08	—27.6%	10.32	30.14	21.78	—27.7%	7.66	22.32	15.61	—30.1%
(b) Cotton Manufacturing (South)	5.70	17.28	10.99	—36.4%	8.07	25.10	16.65	—33.7%	6.31	16.85	11.66	—30.8%
VIII. Wool Manufacturing	9.75	24.75	21.57	—12.8%	11.48	30.51	26.30	—13.8%	8.18	21.21	18.68	—11.9%
VIII. Silk Manufacturing	12.07	24.61	21.80	—11.4%	12.41	27.14	25.57	— 5.8%	7.69	17.33	16.71	— 3.6%
IX. Hosiery and Knit Goods	8.48	22.04	17.59	—20.2%	12.62	29.29	24.16	—17.5%	7.51	17.55	15.23	—13.2%
X. *Rubber*	11.54	27.94	23.45	—16.1%	14.44	34.48	30.93	—10.3%	8.98	19.55	16.13	—17.5%
Leather and Boots and Shoes												
XI. Leather Tanning	11.19	26.73	21.51	—19.5%	12.23	30.78	24.95	—18.9%	6.50	18.07	13.57	—24.9%
XII. Boot and Shoe Manufacturing	9.76	19.41	18.26	— 5.9%	13.37	27.99	26.91	— 3.9%	8.95	19.19	17.60	— 8.3%
XIII. *Meat Packing*	10.24	26.66	21.61	—18.9%	14.93	32.79	27.43	—16.3%	6.95	21.00	16.44	—21.7%
Chemicals and Paints												
XIV. Chemicals												
(a) Chemical Manufacturing	12.17	29.37	23.67	—19.4%	15.24	35.08	27.47	—21.7%	7.00	14.23	13.14	— 7.7%
(b) Fertilizer Manufacturing	10.54	23.32	13.90	—40.4%	12.84	34.98	26.01	—25.6%	.....	.....	.....	.....
XV. Paint and Varnish Manufacturing	13.03	27.34	23.65	—13.5%	17.88	33.38	28.95	—13.3%	8.74	16.77	15.79	— 5.8%
Paper and Printing												
XVI. Paper Manufacturing												
(a) Paper and Wood Pulp Manufacturing	11.39	28.69	21.50	—25.1%	15.05	34.69	27.24	—21.5%	6.28	18.58	12.85	—30.8%
(b) Paper Products Manufacturing	11.27	28.57	19.58	—31.5%	13.63	32.74	25.71	—21.5%	7.04	16.10	13.34	—17.1%
XVII. Printing and Publishing (Book and Job)	9.56	22.79	19.59	—14.0%	18.20	38.05	35.59	— 6.5%	7.20	16.79	15.31	— 8.8%
XVIII. Printing and Publishing (Newspaper)	10.89	22.90	21.19	— 7.5%	20.92	38.79	37.49	— 3.4%	9.22	19.54	15.62	—20.1%
Building Materials and Furniture												
XIX. Lumber and Millwork	10.15	22.78	18.23	—20.0%	15.56	31.90	28.38	—11.0%	.....	.....	.....	.....
XX. Furniture Manufacturing	8.37	21.70	18.61	—14.2%	12.08	29.31	24.80	—15.4%	6.98	16.35	13.16	—19.5%
XXI. Brick and Tile Manufacturing	11.94	28.02	20.69	—26.2%	14.54	34.64	26.44	—23.7%	.....	.....	.....	.....
Public Utilities												
XXII. Distribution and Generation of Electricity	12.11	22.53	19.30	—14.3%	15.32	29.81	28.81	— 3.4%	.....	.....	.....	.....
XXIII. Manufacture and Distribution of Gas	10.77	26.76	24.90	—10.7%	16.58	32.21	30.24	— 6.1%	.....	.....	.....	.....

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D. Comparison of Composite Hourly and Weekly Earnings with the Cost of Living

This report gives the hourly and weekly *money wages* of the three groups of wage earners for various industries. Such data, however, do not fully reflect the economic status of the wage earner in the periods covered. To show this it is necessary to study *money wages* in relation to the cost of living, in order to ascertain the purchasing power of the wages received, or, in other words, to determine the *real wages*. Thus, whereas a weekly wage of $10 will buy one living at a time when the wage earner's cost of living is $10 per week, an increased weekly wage of $15 at a later time will buy 1½ livings if the cost of living remains stationary, or will buy one living with an increase of the cost of living to $15 per week, or will buy only three-quarters of a living if the weekly cost of living should have risen to $20 per week.

In the present report, composite hourly and weekly earnings in the various industries are shown, together with changes in the cost of living for the country as a whole, as ascertained by the National Industrial Conference Board;[1] and by combining the two, changes in *real wages* during the periods studied are brought out. While comparisons of wage changes in specific industries with changes in the cost of living for the country as a whole serve in a general way to reflect the *real wages* in these separate industries, they do not necessarily portray the actual situation in large industrial centers or areas. Since most industries are highly localized, their *real wages* can be determined accurately only on the basis of localized cost of living studies.

Starting in July, 1914 with index number 100 for cost of living, for *money wages* and for *real wages*, in July, 1920, when the cost of living had risen to an index figure of 204.5, hourly earnings had increased to 252 and weekly earnings to 240. Thus, in July, 1920 the real wage based on hourly earnings was 123.2, while the real wage based on weekly earnings was 117.4.

While the peak of the cost of living was reached in July, 1920, the peak of hourly earnings did not occur till September. The decline in the cost of living, subsequent to July, 1920, therefore continued to increase the real wage based on hourly

[1] See Research Reports Nos. 9, 14, 17, 19, 25, 28, 30, 33, 36, 39, 44.

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earnings, up to March, 1921, when the real wage curve stood at 133.4. In April and May, 1921 the real wage based on hourly earnings showed a slight decline but rose in June to 132.2. In other words, *in the middle of 1921 the real hourly earnings were 32.2% higher than in July, 1914.*

The peak of real weekly earnings, however, occurred in October, 1920, when the index stood at 120.6. During the next two months, weekly earnings declined faster than the cost of living, so that the real wage curve based on weekly earnings stood in December at 116.8, and in January at 113.7. Real weekly earnings rose during February and March, when the cost of living declined less than did weekly earnings. The trough period occurred in April, 1921, when real weekly earnings stood at 112.8. A recovery took place in May and June, when real weekly earnings rose to 114.1 and 114.3. In other words, *at the end of June, 1921, the real weekly earnings were 14.3% higher than in July, 1914.*

The investigation conclusively shows that the reduced hourly earnings in June, 1921 left the wage earner 32.2% better off in real hourly wages, and 14.3% better off in real weekly earnings than in July, 1914. In the latter case, part-time employment, in addition to wage reduction, was responsible for the difference between real hourly and real weekly earnings.

E. General Conclusions

The general results of the entire study may be summed up as follows:

(1) Both hourly and weekly earnings in all branches of American industry show large increases from July, 1914 to June, 1920.

(2) The trends of hourly and weekly earnings show well sustained levels through 1920, with sharp declines occurring at the beginning of 1921 and continuing through the first six months of the year.

(3) The decline in weekly earnings was influenced more by part-time employment than by reduction in hourly earnings.

(4) The extensive decline in wages has affected women less than men.

(5) While there was a tremendous drop in employment from the general peak of productive activity in 1920, through

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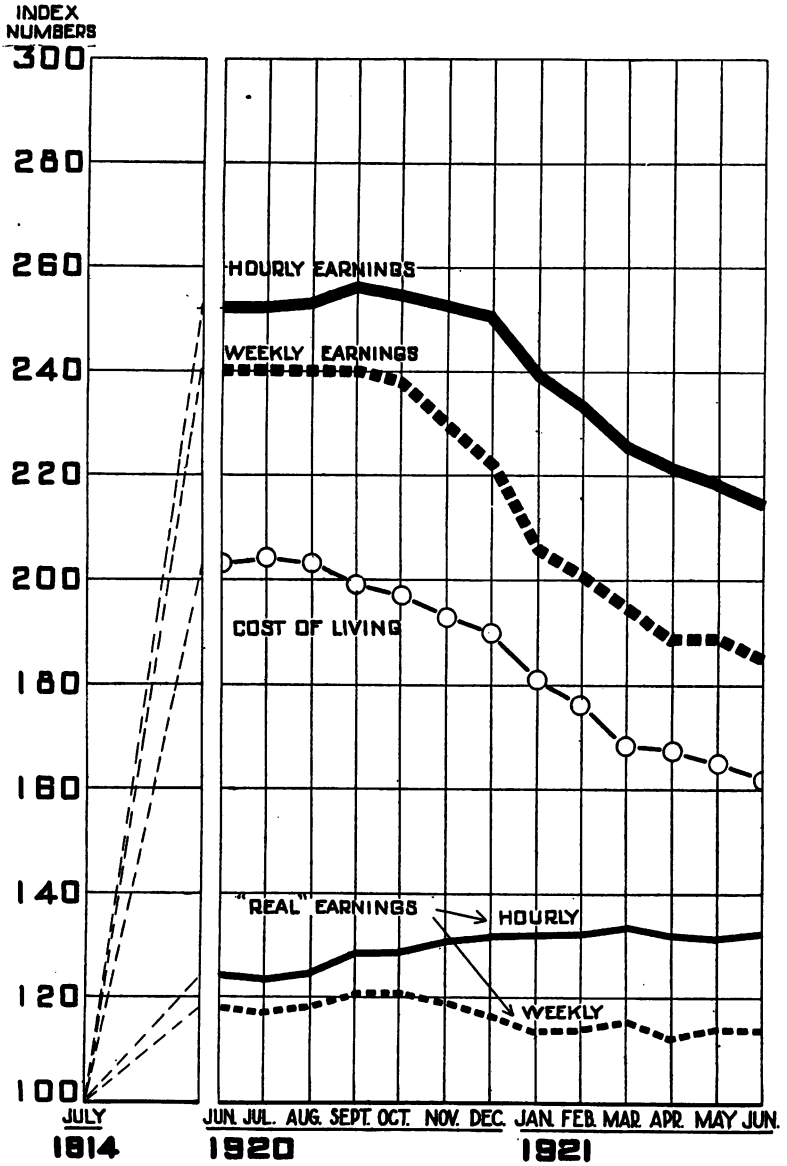
CHART K: AVERAGE HOURLY AND WEEKLY MONEY WAGES, COST OF LIVING AND "REAL" HOURLY AND WEEKLY WAGES, ALL INDUSTRIES, JULY, 1914 UP TO JULY, 1921.

(National Industrial Conference Board)



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the middle of 1921, employment in identical establishments in June, 1921 had shrunk only slightly below that of the 1914 level.

(6) There was a general reduction in the length of working hours between 1914 and 1920, due to economic and social influences. The decline between 1920 and the middle of 1921, however, may be traced directly to the industrial depression. The average loss of plant activity for all industries during the latter period amounted to 4½ hours, or a drop of 9% from the hours of operation in June, 1920.

(7) The *average actual week per wage earner* in all industries in June, 1921 was 10% or five hours less than that in June, 1920. The trend of working hours has closely followed that of plant activity.

(8) *The real hourly wage of the average wage earner was 32.2% higher and the real weekly wage 14.3% higher in June, 1921 than in July, 1914. Therefore, the economic status of the American worker, as measured by real wages, or the purchasing power of his money earnings, was considerably higher in the middle of 1921 than before the war, despite extensive wage reductions and curtailments of operation due to industrial depression.*

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I

FOUNDRY AND MACHINE-SHOP PRODUCTS[1]

In the metal working industries the wage investigation has been separated into four divisions: foundry and machine-shop products, agricultural implement manufacturing, automobile manufacturing, and electrical apparatus manufacturing. The foundry and machine-shop division comprises all establishments not included under other classifications in the metal working group. Foundry and machine-shop processes are necessarily employed in connection with the manufacture of a great variety of products. While there are many establishments making well-defined products that might be placed in a seprate group, there are so many other foundries and machine shops making miscellaneous products, that separation into these smaller classifications has not been made. On the whole, the general classification of foundry and machine-shop products, exclusive of the three other industries designated above, covers the type of establishments studied. Over 80% of the wage earners classified in this group by the 1919 Census of Manufactures are included in this investigation. Schedules were received from 1,552 plants employing 438,594 wage earners at the high point in August, 1920. Women were employed in 435 plants. The data may therefore be considered as exceedingly representative in the coverage of wage earners, and in the distribution and size of establishments involved. The returns are chiefly from the states where the largest amount of foundry and machine-shop products are made. The geographical distribution within 43 states is as follows:

Alabama	8	Georgia	4
Alaska	1	Illinois	128
Arizona	1	Indiana	58
Arkansas	1	Iowa	22
California	47	Kansas	7
Colorado	5	Kentucky	11
Connecticut	94	Louisiana	3
Delaware	6	Maine	3

[1]Exclusive of agricultural implement, automobile and electrical apparatus manufacturing.

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Maryland	8	Oklahoma	5
Massachusetts	164	Oregon	5
Michigan	75	Pennsylvania	207
Minnesota	18	Rhode Island	19
Missouri	48	South Carolina	1
Montana	1	Tennessee	8
Nebraska	4	Texas	10
Nevada	1	Vermont	6
New Hampshire	8	Virginia	13
New Jersey	58	Washington	15
New Mexico	1	West Virginia	10
New York	184	Wisconsin	61
North Carolina		Wyoming	1
Ohio	218		

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* showed an increase of 137% from July, 1914 to September, 1920. The decline from the latter month up to July, 1921 was 13.7%. The period has shown a gradual descent, with severer reductions occurring in the spring of 1921. In June, 1921, composite hourly earnings were 105% above July, 1914.

In September,. 1920 the hourly earnings for male labor showed an increase over 1914 of 155% for *common labor* and 133% for *skilled labor.* The peak for *women* was reached in October and November, when the increase was 168%. The decline for each of these three groups from the peak months up to July, 1921 was as follows: 15.6% for *common labor,* 13.4% for *skilled labor* and 14.9% for *women.* In June, 1921 the percentages of increase above July, 1914 for these three groups were respectively 115%, 102% and 128%. Relatively, the largest increase was found among the female group, while the largest amount of decrease was found among the male unskilled wage earners.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 135% from July, 1914 to October, 1920 and declined 26.5% from the latter period up to July, 1921. The decline shows a gradual descent to the beginning of 1921, and rather severe reductions during the first six months of the year. The decline in weekly earnings was due rather to the decrease in hours worked than to severe reductions in hourly rates.

The peak in weekly earnings for *common labor* was reached in August, 1920, when there was shown an increase of 150%

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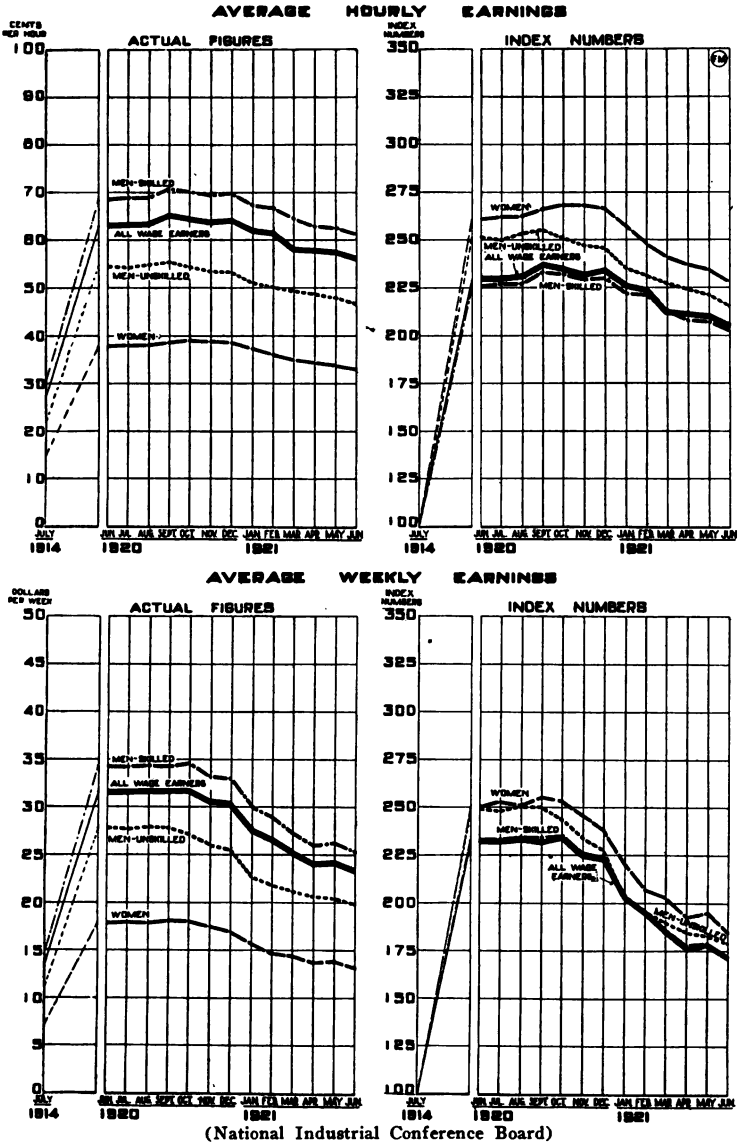

(National Industrial Conference Board)

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings Hrly.	Index Nos. Earnings Wkly
1914									
July*....	*226,214*	*226,214*	*49.4*	*53.4*	*54.3*	*$.274*	*$13.52*	*100*	*100*
1920									
June.....	351,717	434,150	50.0	51.6	51.6	.630	31.5[illegible]	230	233
July.....	354,432	437,879	50.0	51.7	51.5	.631	31.5[illegible]	230	233
Aug.....	355,525	438,594	49.9	51.7	51.5	.634	31.6[illegible]	231	234
Sept.....	355,601	436,860	48.6	50.8	51.5	.650	31.6[illegible]	237	234
Oct.....	342,00[illegible]	421,232	49.3	50.6	51.5	.644	31.72	235	235
Nov.....	321,67[illegible]	396,635	48.0	49.6	51.4	.637	30.6[illegible]	232	226
Dec.....	298,65[illegible]	369,125	47.2	48.1	51.3	.641	30.2[illegible]	234	224
1921									
Jan.....	262,624	323,156	44.5	45.8	51.2	.619	27.52	226	204
Feb.....	248,281	306,375	43.2	44.3	51.2	.614	26.50	224	196
Mar.....	234,361	291,725	42.4	43.7	51.2	.593	25.13	216	186
April....	218,265	272,394	41.5	42.7	51.2	.579	24.04	211	178
May.....	204,147	256,232	42.1	43.2	51.2	.574	24.16	210	179
June.....	195,349	243,302	41.6	42.7	51.2	.561	23.32	205	172

*1914-1921 establishments only. See pp. 3, 5.

over 1914; for *skilled labor*, in October, 1920, with an increase of 134%, and for *women*, in September, when there was an increase of 155%. The declines for these three groups from their respective peaks up to July, 1921 were as follows: 28.5% for *common labor*, 26.8% for *skilled labor* and 27.4% for *women*. In June, 1921 *common labor* was 79% over 1914, *skilled labor*, 72%, and *women*, 85%. The decline for all groups has been severe during the months of 1921, particularly among the skilled wage-earning class.

The decline in hourly earnings reflects the general trend toward readjustment in the basic industries. The reduction in weekly earnings has been far more severe, due to part-time operations. It would appear that while the decline in hourly wages has been below the average, the amount of part-time operations has seriously affected the weekly income of the wage earner. The trend of wages in this group may be con-

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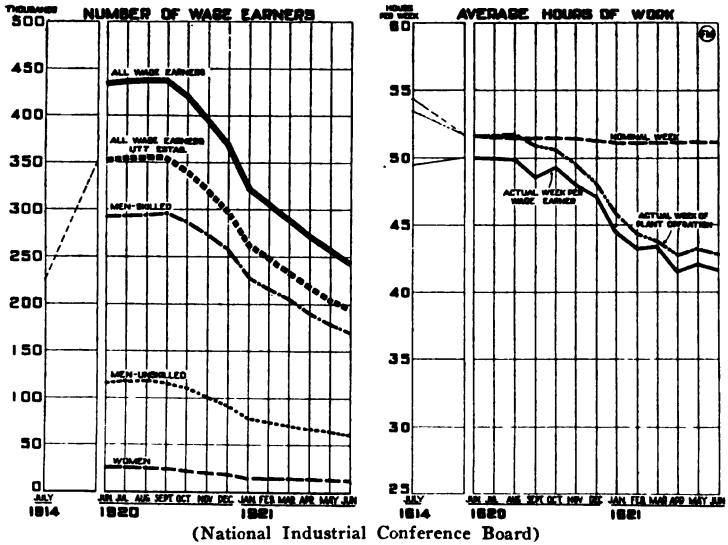

(National Industrial Conference Board)

sidered somewhat as a barometer for fluctuations in the entire metal group.

Employment

Total employment decreased 44.5% from August, 1920 up to July, 1921. The reduction in the number of wage earners has been severe throughout the entire period from the peak to the middle of 1921. The most severe declines, however, occurred in the early months of 1921, though no particular time can be pointed out as the period of greatest depression. The employment situation in this industry reflects the general industrial condition and follows the course of the severe stagnation that has occurred since the fall of 1920.

The high point of employment for common labor was reached in August, for skilled labor in September, and for women in July. The decreases in numbers employed for these three groups, from the various peaks in 1920, were as follows: common labor, 48.6%; skilled labor, 42.7%; women, 50.7%. Indications point to the taking over by skilled labor of the work formerly done by unskilled labor, and to a general return of women from industrial to domestic and other occupations.

The total number of employees in identical establishments increased 55% from July, 1914 to June, 1920. About 14%

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less wage earners were employed in identical establishments in June, 1921 than in July, 1914.

Hours

The length of the *nominal week* in July, 1914 was 54.3 hours. Following the general reduction in length of working hours during the war period, the week was reduced to 51.6 hours in June, 1920. This standard of approximately 51½ hours has been maintained throughout 1920-1921.

The *actual week of plant operation* shows a reduction from 53.4 hours in July, 1914 to 51.6 hours in June, 1920. This standard was practically maintained until the fall, when declines began to occur, which continued throughout the entire period of the investigation, the trough of 42.7 hours being reached in April and June, 1921. The slump in plant activity is ascribable directly to the general economic depression in the metal working trades.

The *average actual week per wage earner* increased from 49.4 hours in July, 1914 to 50 hours in June, 1920. This level was generally maintained until November, when the decline in plant activity began to take effect. The declines continued to the trough of 41.5 hours in April. A slight revival occurred in May, followed again by a slump in June. In the latter period there was a loss of almost 10 hours of potential working time from the standard or nominal week.

An analysis of the accompanying charts indicates that while the numbers of employed continue to decrease severely, those that were kept on the payrolls were working approximately the average hours of plant operation. An attempt, therefore, would seem to have been made by management to keep the weekly earnings of the employed wage earner at a reasonable level.

Conclusion

The foundry and machine-shop group, the largest and most important covered in this investigation, may be taken as a barometer of general wage conditions, and careful comparison should be made with the other industrial groups in this report. Specifically, the investigation shows, in this industry:

1. A decline in hourly earnings below general industrial deflation. (13.7%.)

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*.....	*59,279*	*51.4*	*$.217*	*$11.14*	*100*	*100*	*158,382*	*48.7*	*$.303*	*$14.76*	*100*	*100*	*8,553*	*48.9*	*$.145*	*$ 7.11*	*100*	*100*
1920																		
June.....	115,900	50.9	.545	27.75	251	249	292,472	49.9	.685	34.22	226	223	25,784	47.2	.378	17.81	261	250
July.....	118,085	50.9	.543	27.67	250	248	293,798	49.8	.688	34.30	227	232	25,996	47.3	.380	17.97	262	253
Aug.....	118,474	50.7	.549	27.85	253	250	294,567	49.9	.689	34.36	227	233	25,553	46.9	.380	17.85	262	251
Sept.....	116,018	50.3	.553	27.80	255	250	296,223	48.5	.707	34.25	233	232	24,619	46.9	.386	18.11	266	255
Oct.....	110,912	50.0	.544	27.16	251	244	287,451	49.3	.702	34.57	232	234	22,869	46.3	.389	18.00	268	253
Nov.....	102,008	48.8	.535	26.08	247	234	274,016	47.9	.694	33.24	229	225	20,611	45.1	.388	17.47	268	246
Dec.....	92,631	47.6	.533	25.40	246	228	257,811	47.2	.698	32.96	230	223	18,683	44.0	.386	16.96	266	238
1921																		
Jan.....	79,158	44.4	.511	22.66	235	203	228,108	44.6	.673	30.03	222	203	15,890	42.3	.372	15.70	257	221
Feb.....	75,220	43.4	.502	21.78	231	196	216,080	43.3	.669	28.96	221	196	15,075	40.8	.360	14.70	248	207
March....	71,532	42.9	.493	21.15	227	190	205,398	42.3	.646	27.29	213	185	14,795	41.2	.350	14.42	241	203
April.....	67,382	42.3	.487	20.64	224	185	190,634	41.3	.629	26.02	208	176	14,378	40.1	.343	13.75	237	193
May.....	64,585	42.6	.479	20.42	221	183	178,236	42.0	.626	26.29	207	178	13,411	40.9	.339	13.84	234	195
June.....	60,866	42.6	.467	19.90	215	179	169,624	41.4	.612	25.32	202	172	12,812	39.7	.331	13.14	228	185

*1914-1921 establishments only. See pp. 3, 5.

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2. A large reduction in weekly earnings due to part-time operations. (26.5%.)

3. A tremendous decline in total employment between the summer of 1920 and the spring of 1921. (44.5%.)

4. A loss of about 20% in working time or a reduction of 10 hours from the nominal standard 51½ hour week.

5. The condition of the industry affected all three groups—common and skilled male labor, and women. Unskilled and skilled wage earners appeared to be more or less equally affected.

6. The large number of female wage earners leaving the industry have evidently returned to domestic occupations.

7. The trough period of depression occurred at the close of the period covered by this investigation, (June, 1921).

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II

AUTOMOBILE MANUFACTURING

The wage investigation in the automobile industry includes establishments manufacturing and assembling complete automobiles, both passenger cars and motor trucks, and also plants producing automotive parts. The latter group, however, covers plants engaged only in manufacturing parts directly used by the automobile industry, and does not include jobbers, dealers or rubber tire manufacturers. Returns were received from 101 plants, employing 107,301 wage earners at the high point in June, 1920. Women were employed in 62 of these plants. Approximately 27% of the wage earners listed by the 1919 Census of Manufactures as then employed in this industry are covered by this report. The geographical distribution in 13 states is as follows:

State	Trucks	Passenger	Automotive Parts	Total
California	1	1	..	2
Connecticut	..	..	2	2
Illinois	2	2	2	6
Indiana	..	8	7	15
Massachusetts	..	1	5	6
Michigan	3	8	11	22
Missouri	..	2	2	4
Nebraska	..	..	1	1
New Jersey	1	1	1	3
New York	2	4	8	14
Ohio	2	6	6	14
Pennsylvania	2	1	3	6
Wisconsin	..	3	3	6
Grand Total	13	37	51	101

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* showed an increase of 141% from July, 1914 to September, 1920. The decline from the latter period up to July, 1921 was 16.9%. In June, 1921 the increase was 100%

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over July, 1914. The period between June, 1920 and the peak in September was characterized by a very slight increase. The decline during the closing months of 1920 became severe, and continued, though more gradually, up to July, 1921.

At their peak in October, 1920 the hourly earnings of *common labor* had increased 159% over July, 1914. In June, 1920, the hourly earnings of *skilled labor* had increased 147% over 1914. The high point for *women* was reached in September, 1920, when there was shown an increase of 71% over 1914. The decreases for the three groups from the peak months up to July, 1921, were 16.8% for *common labor*, 18.9% for *skilled labor* and 17.9% for *women*. In June, 1921 the percentages of increase over July, 1914 for these three groups were 115%, 101% and 40%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 119% from July, 1914 to July, 1920, and declined 26% from the latter period up to July, 1921, showing a net increase of only 62% at the latter period. There was a slight increase from June to July, 1920, followed by sharp declines during the last six months of 1920. A trough was reached in January, followed by a revival through April, and another sharp slump in May and June, 1921.

The high point of weekly earnings for male labor was reached in July, 1920, when *common labor* was 131% and *skilled labor* 122% above 1914. The high point in weekly earnings for *women* was reached in September, when there was shown an increase of 61% over 1914. The decreases for these three groups from their respective peaks up to July, 1921 were as follows: *common labor*, 27.8%; *skilled labor*, 25.9%; *women*, 23.7%. In June, 1921 the percentages of increase over 1914 for these three groups were respectively 67%, 65% and 23%.

Employment

Total employment in the automobile industry decreased 52.3% from June, 1920 up to July, 1921. The decline from June, 1920 to the severe trough at the beginning of 1921 was 65.4%. The depression period was followed by a marked revival, which reached its peak in May, followed by a considerable slump in June. The increase between the trough in January and June amounted to 38%. The de-

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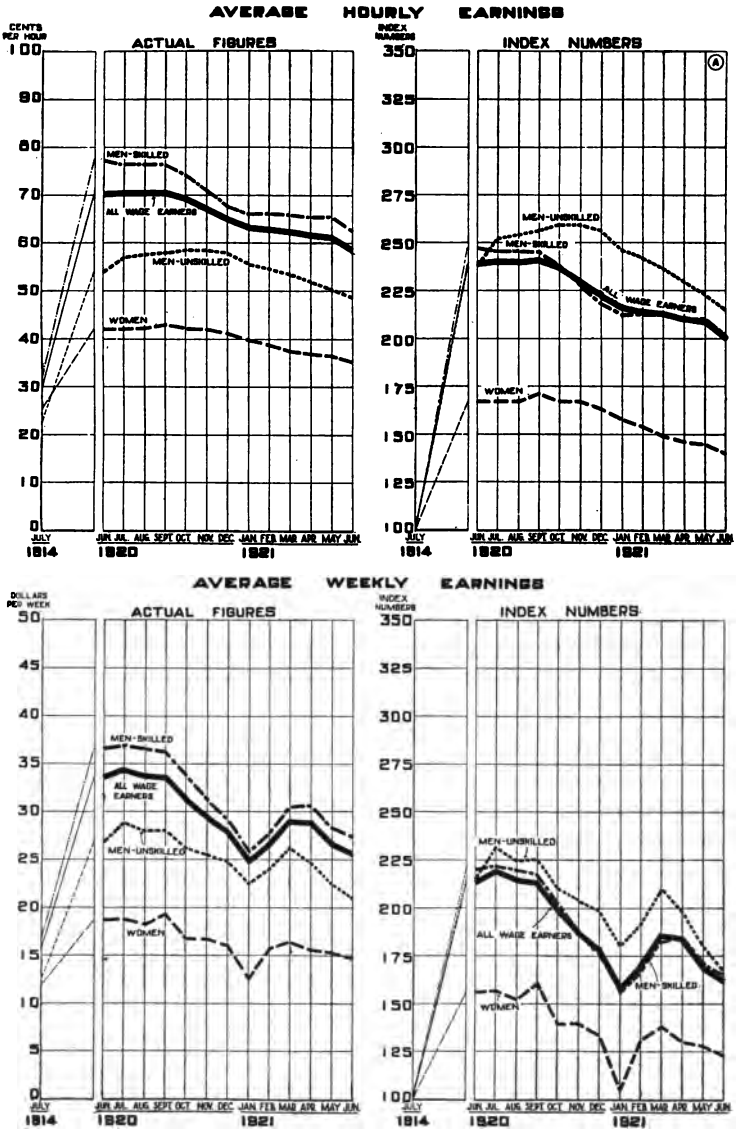

(National Industrial Conference Board)

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*	*24,397*	*24,397*	*53.6*	*54.3*	*54.7*	*$.293*	*$15.71*	*100*	*100*
1920									
June	80,291	107,301	47.8	50.3	50.8	.701	33.50	239	213
July	80,271	106,657	48.7	49.7	50.8	.703	34.34	240	219
Aug.	70,890	95,982	47.8	49.1	50.8	.704	33.68	240	214
Sept	63,006	81,869	47.5	48.7	50.8	.705	33.50	241	213
Oct	48,910	59,725	45.1	47.0	50.9	.693	31.24	237	199
Nov	38,833	48,370	43.9	46.6	51.0	.671	29.42	229	187
Dec	31,572	40,713	42.9	45.8	51.0	.649	27.83	222	177
1921									
Jan	28,896	37,076	39.1	40.0	51.0	.632	24.72	216	157
Feb	31,340	39,984	42.2	42.3	51.0	.628	26.52	214	169
March	35,489	46,181	46.6	45.4	51.0	.623	29.05	213	185
April	40,004	52,870	46.8	45.0	51.0	.616	28.84	210	184
May	39,409	53,666	43.5	45.9	51.1	.611	26.55	209	169
June	37,268	51,178	43.3	43.3	51.1	.586	25.40	200	162

*1914-21 establishments only. See pp. 3, 5.

creases in the groups from the high point of employment up to July, 1921 were as follows: common labor, 55.2%; skilled labor, 51.2%; women, 58.8%.

The increase in employment between July, 1914 and June, 1920, in identical establishments, was 229%. There was a net increase of 53% in employment between July, 1914, and June, 1921. The tremendous expansion of the automobile industry between 1914 and 1920 prevented employment during the depression period from dropping to the level of 1914.

Hours

The hours of the *nominal week* in July, 1914 were 54.7. Following the general reduction in length of working hours during the war period, the week was reduced to approximately 51 hours in June, 1920, and the latter standard has been maintained throughout 1920-1921.

The *actual week of plant operation* dropped from 54.3 hours

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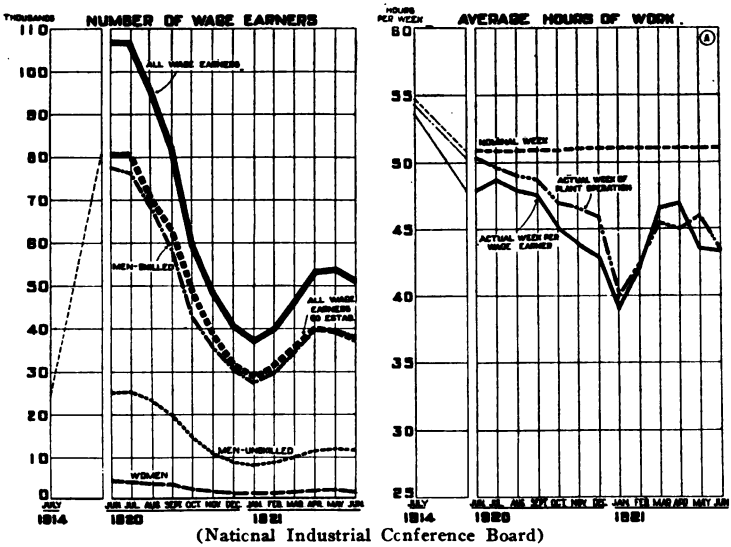

(Naticnal Industrial Cnnference Board)

in July, 1914 to 50.3 hours in June, 1920. A gradual decline occurred during the next months. In December, 1920 the hours fell to 45.8 per week, followed by a sharp decline in January to 40 hours. Plant activity increased during the spring of 1920, but declined again in June.

The *actual week per wage earner* declined from 53.6 hours in July, 1914 to 47.8 in June, 1920. The low point of 39.1 hours was reached in January. In June, 1921 the average wage earner was working almost eight hours less than the standard week.

Conclusion

1. The peak occurred in the middle of 1920; the trough period in January, 1921; a revival period during the spring months; and a slump in June, 1921. This trend was reflected alike in wages, hours, and employment.

2. Decline in hourly earnings has been more rapid than in the majority of basic industries, amounting to 17%.

3. The decrease in weekly earnings has been extensive (26%) due to the amount of part-time operation.

4. Increased employment was evidenced in the early months of 1921, but domestic buying conditions and the foreign credit situation have forced extended retrenchments.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*4,838*	*55.3*	*$.226*	*$12.47*	*100*	*100*	*19,142*	*53.3*	*$.312*	*$16.61*	*100*	*100*	*417*	*47.6*	*$.252*	*$11.99*	*100*	*100*
1920																		
June.....	25,268	49.8	.538	26.79	238	215	77,603	47.3	.772	36.53	247	220	4,430	44.5	.420	18.69	167	156
July.....	25,612	50.7	.569	28.85	252	231	76,680	48.3	.765	36.92	245	222	4,365	44.7	.421	18.80	167	157
August .	23,401	48.6	.575	27.98	254	224	68,604	47.8	.764	36.52	245	220	3,977	43.3	.422	18.28	167	152
September	19,982	48.5	.578	28.01	256	225	58,394	47.3	.765	36.22	245	218	3,493	44.8	.430	19.29	171	161
October..	14,446	44.8	.585	26.17	259	210	42,767	45.5	.743	33.80	238	203	2,512	39.9	.422	16.84	167	140
Nov.....	11,090	43.5	.585	25.46	259	204	35,363	44.2	.710	31.35	228	189	1,917	39.9	.421	16.78	167	140
Dec	8,975	42.8	.579	24.79	256	199	30,372	43.1	.679	29.26	218	176	1,366	39.1	.412	16.07	163	134
1921																		
Jan.....	8,114	40.2	.557	22.43	246	180	27,821	39.1	.662	25.89	212	156	1,141	31.8	.398	12.63	158	105
Feb. ...	8,860	43.7	.546	23.86	242	191	29,883	41.9	.663	27.76	212	167	1,241	40.3	.389	15.69	154	131
March...	10,001	48.8	.536	26.18	237	210	34,595	46.1	.660	30.46	212	183	1,585	44.0	.375	16.49	149	138
April.....	11,466	47.6	.519	24.73	230	198	39,535	46.8	.655	30.66	210	185	1,869	42.5	.368	15.60	146	130
May.....	11,889	44.6	.503	22.46	223	180	39,785	43.2	.656	28.34	210	171	1,992	41.8	.365	15.29	145	128
June.....	11,462	42.8	.487	20.84	215	167	37,889	43.6	.626	27.35	201	165	1,827	41.7	.353	14.72	140	123

*1914-21 establishments only. See pp 3, 5.

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III

AGRICULTURAL IMPLEMENT MANUFACTURING

The wage investigation in this industry covers establishments manufacturing plows, cultivators, tractors, harvesting implements, etc. It includes also several plants where, in addition to agricultural implements, other products not distinctly agricultural, such as wind-mills, carriages and wagons, are made. The classification practically follows that of the United States Census of Manufactures. Returns were received from 138 plants, employing at the peak in 1920, 49,704 wage earners. Women were employed in 35 of these plants. Approximately 86% of the wage earners listed in the 1919 Census of Manufactures in this industry are covered in this report. The geographical distribution within 19 states is as follows:

Arkansas	1	Missouri	4
California	5	Nebraska	2
Georgia	5	New Jersey	1
Illinois	26	New York	17
Indiana	9	Ohio	15
Iowa	12	Pennsylvania	6
Kansas	1	Tennessee	1
Kentucky	4	Virginia	1
Michigan	2	Wisconsin	19
Minnesota	7		

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 167% from July, 1914 to the high point in September, 1920. The decline from the latter period up to July, 1921 was 22.9%. At that time the increase was 106% over July, 1914. The period from November, 1920 to the middle of 1921 was characterized by severe declines, the average total cut being 15 cents per hour.

In August, 1920 the hourly earnings of *common labor* had increased 169% over July, 1914; in September, those of *skilled labor*, 166%, and in the same month, those of *women*, 194%. The decline for each of these groups from the peak months up

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to July, 1921 was 21.4% for *common labor*, 22.8% for *skilled labor*, and 21.7% for *women*. The percentages of increase above July, 1914 for these three groups were respectively 112%, 105% and 130%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 154% from July, 1914 to the high point in September, 1920, and from the latter period up to July, 1921, declined 38%, showing a net increase of 57% to the middle of 1921. There was a rise during the summer months of 1920, while sharp declines occurred at the close of 1920 and continued through 1921.

The high point of weekly earnings for *common labor* was reached in August, 1920, when the increase was 162% over 1914. The peak for *skilled labor* was reached in September, when the increase was 151%, and for *women* in October, when the increase was 190%. The declines for these three groups from their respective peaks up to July, 1921 were as follows: *common labor*, 38.8%; *skilled labor*, 37.5%; *women*, 34.4%. Percentage increases above 1914 for these three groups were respectively 60%, 57% and 90%.

Employment

The total employment in this industry decreased 66% from the high point in September, 1920 up to July, 1921. Employment was practically stationary in the summer and early fall of 1920. Extensive reductions in working forces began at the close of 1920, and continued throughout the first six months of 1921. The decreases in the groups from the high point of employment up to July, 1921 were as follows: *common labor*, 65.3%; *skilled labor*, 67.3%; *women*, 47.9%.

The total number of employees in identical establishments increased 41% between July, 1914 and September, 1920, while 52% fewer employees were engaged in identical establishments in June, 1921 than in July, 1914.

Hours

The average hours of the *nominal week* in July, 1914 were 56.3. Folloinwg the general reduction in length of working hours during the war period, the week was reduced to 53.7 hours in June, 1920. The standard of approximately 53 hours

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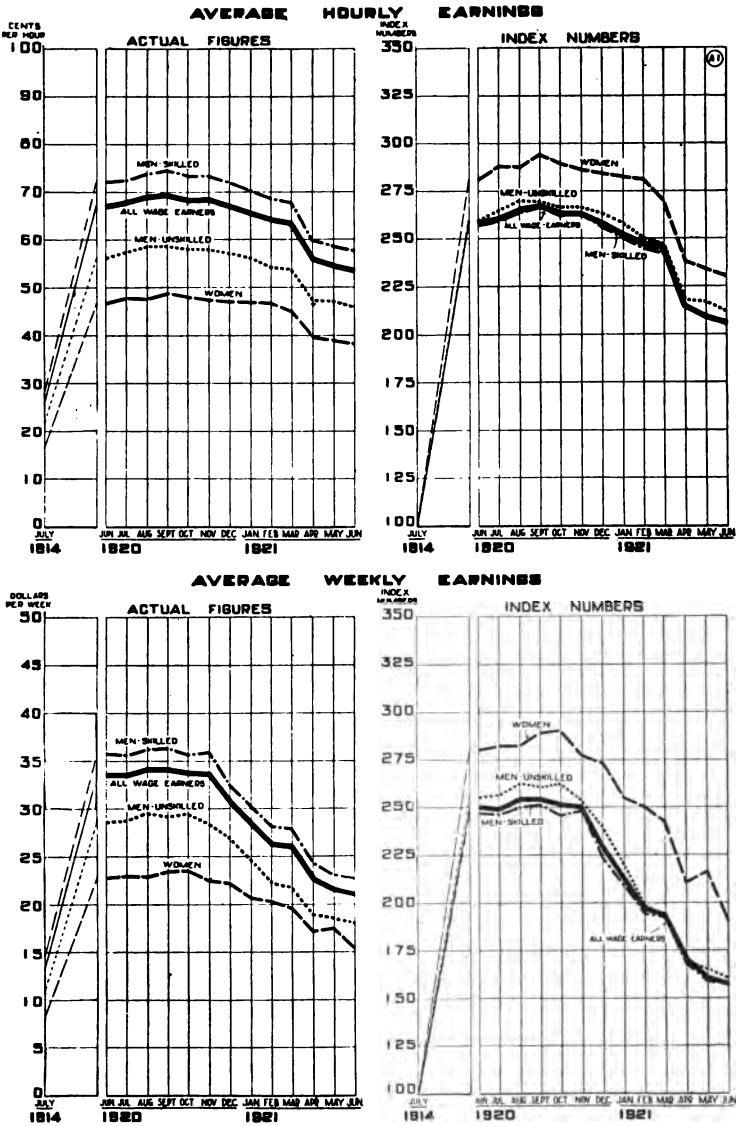

(National Industrial Conference Board)

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*	*31,823*	*31,823*	*51.6*	*52.2*	*56.3*	*$.260*	*$13.41*	*100*	*100*
1920									
June	44,439	49,132	50.0	50.9	53.7	.670	33.49	258	250
July	43,873	48,791	49.3	50.5	53.6	.676	33.39	260	249
Aug.	44,442	49,361	49.4	50.8	53.5	.688	34.00	265	254
Sept	44,983	49,704	49.0	50.5	53.5	.694	34.02	267	254
Oct.	44,622	49,062	49.2	50.2	53.5	.683	33.65	263	251
Nov	44,898	48,875	48.9	49.5	53.5	.685	33.51	263	250
Dec.	40,158	42,997	45.7	46.5	53.4	.671	30.67	258	229
1921									
Jan.	37,978	40,795	43.3	44.5	53.2	.656	28.40	252	212
Feb.	34,835	37,881	41.0	40.6	53.1	.641	26.28	247	196
March	32,029	34,873	41.0	41.5	53.1	.634	26.01	245	194
April	25,800	27,687	40.6	40.5	53.1	.560	22.74	215	170
May	19,140	20,742	39.6	39.1	53.1	.544	21.55	209	161
June	15,351	16,801	39.4	39.3	53.1	.535	21.09	206	157

*1914-1921 establishments only. See pp. 3, 5.

has been fairly steadily maintained throughout 1920-1921.

The *actual week of plant operation* shows a reduction from 52.2 hours in July, 1914 to 50.9 hours in June, 1920. There was a gradual decline in plant activity during the fall of 1920. The depression period began in December, 1920, and continued through May, 1921. At that time there was a decline of over 11 hours per week in plant operation from the preceding year. A slight recovery was noted in June, 1921.

The average *actual week per wage earner* showed a decline from 51.6 hours in July, 1914 to 50 hours in June, 1920. After further decline, an average of approximately 49 hours was maintained up to December, when the depression began to take effect. The average hours continued to decline in 1921, till June, when the average wage earner was working over 10 hours less per week than at a corresponding time in the preceding year.

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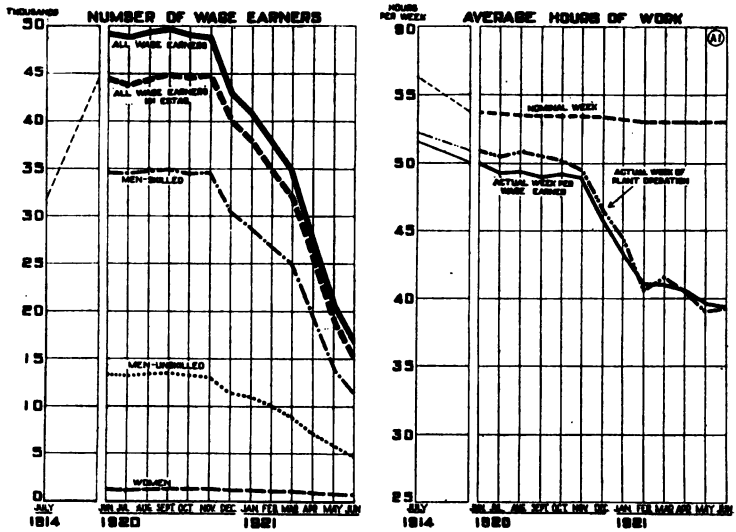

(National Industrial Conference Board)

Conclusion

No industry has more clearly shown the effect of the industrial depression. Two factors, at least, have been the cause of the great decline in earnings, employment, and plant activity. The deflation in the prices of farm products resulted in a curtailment in the buying power and credit of farmers and a practical stagnation in the agricultural implement market. However, the depression has not been due altogether to domestic conditions, but has also been largely influenced by the foreign situation, for the condition of foreign credits and stoppage of foreign orders for the buying of agricultural implements, has largely cut off exportation. Specifically, the investigation has shown:

1. A continuous and severe deflation in wages beginning in the fall of 1920, and amounting in the middle of 1921 to a 23% decline in hourly earnings and a 38% decline in weekly earnings.

2. Approximately 60% of the wage earners were laid off during the first six months of 1921. The industrial depression also forced many plants to shut down altogether or greatly to curtail operation.

3. As a result of both domestic and foreign conditions, this industry has been severely affected by the industrial depression.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					1 Hr y.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*8,368*	*51.7*	*$.217*	*$11.22*	*100*	*100*	*22,432*	*51.7*	*$.280*	*$14.47*	*100*	*100*	*1,023*	*48.8*	*$.166*	*$8.11*	*100*	*100*
1920																		
June.....	13,352	50.9	.561	28.58	259	255	34,533	49.7	.720	35.77	257	247	1,247	48.7	.467	22.72	281	280
July.....	13,131	50.2	.572	28.71	264	256	34,466	49.1	.724	35.54	259	246	1,194	47.8	.478	22.91	288	282
Aug.....	13,355	50.5	.583	29.43	269	262	34,799	49.1	.737	36.14	263	250	1,207	48.0	.477	22.89	287	282
Sept.....	13,477	49.9	.584	29.13	269	260	34,967	48.7	.745	36.28	266	251	1,260	48.0	.488	23.43	294	289
Oct.....	13,276	50.9	.578	29.42	266	262	34,505	48.6	.733	35.65	262	246	1,281	48.9	.480	23.49	289	290
Nov.....	13,052	49.0	.578	28.35	266	253	34,530	48.9	.733	35.87	262	248	1,293	47.4	.474	22.44	286	277
Dec.....	11,410	47.0	.571	26.85	263	239	30,416	45.1	.718	32.42	256	224	1,171	47.1	.471	22.18	284	273
1921																		
Jan.....	10,953	44.0	.560	24.60	258	219	28,649	43.0	.701	30.17	250	209	1,193	44.2	.468	20.67	282	255
Feb.....	10,101	41.0	.542	22.22	250	198	26,684	40.9	.686	28.07	245	194	1,096	43.3	.467	20.25	281	250
March...	8,936	40.5	.537	21.73	247	194	24,882	41.0	.678	27.82	242	192	1,055	45.9	.448	19.62	270	242
April.....	7,196	40.0	.473	18.95	218	169	19,622	40.7	.598	24.37	214	168	869	43.2	.397	17.12	239	211
May.....	5,900	39.4	.470	18.50	217	165	14,107	39.5	.584	23.04	209	159	735	44.8	.390	17.52	234	216
June.....	4,682	39.2	.459	18.00	212	160	11,445	39.5	.575	22.68	205	157	674	40.4	.382	15.41	230	190

* 1914-1921 establishments only. See pp. 3, 5.

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IV

ELECTRICAL APPARATUS MANUFACTURING

In this group the wage investigation covers establishments engaged in the manufacturing of electrical apparatus, electrical machinery and electrical appliances. So far as possible, the study has been restricted to manufacturers of electrical equipment and supplies, not including manufacturers who assemble this class of material with other products. The survey covers no establishments engaged in jobbing in either wholesale or retail trade. Schedules were received from 107 plants, employing 88,225 wage earners in October, 1920. Women were employed in 73 plants. Approximately 35% of the wage earners listed in the 1919 Census of Manufactures as being employed in this industry are included in this report. The real coverage is even greater, as the Census covers establishments engaged in miscellaneous manufacturing that have not been included in this investigation. The data are considered representative of the electrical industry as to the percentage of wage earners covered and distribution and size of establishments involved. The geographical distribution within 19 states is as follows:

California	3	Missouri	2
Connecticut	7	New Hampshire	1
Illinois	14	New Jersey	8
Indiana	3	New York	9
Iowa	1	Ohio	15
Kentucky	1	Pennsylvania	13
Maryland	1	Tennessee	1
Massachusetts	13	Washington	2
Michigan	7	Wisconsin	5
Minnesota	1		

The sectional distribution is as follows: New England States, 21; Middle Atlantic, 30; South Atlantic, 1; East North Central, 44; West North Central, 4; East South Central, 2; Pacific, 5.

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Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* show an increase of 132% from July, 1914 to October, 1920. The decline from the latter period up to July, 1921 was 11.1%. In June, 1921 the increase was 106% over July, 1914. The peak was reached in the fall of 1920, followed by a gradual decline through February, 1921. In March general wage reductions forced hourly earnings downwards, followed by a slight revival in May and June. In November, 1920 hourly earnings of *common labor* had increased 155% over July, 1914. In October *skilled labor* had increased 133%, and in September *women* 143% over 1914. The high point of hourly earnings for women was found in both June and September, 1920. The decline from these various high points for the different groups amounted to 14.1% for *common labor*, 11.9% for *skilled labor* and 14.9% for *women*. In June, 1921 the percentages of increase over July, 1914 for the three groups were respectively 119%, 106% and 107%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 123% from July, 1914 to October, 1920, and from the latter period up to July, 1921 declined 21.8%, showing a net increase to the first of July, 1921 of 74% over July, 1914. The high point of weekly earnings for the male labor group was reached in October, 1920, when *common labor* was 142%, and *skilled labor* 128%, above 1914. The peak for *women* was reached in November, when their earnings had increased 125% over 1914. The decline from the high point for each of the various groups up to July, 1921 was 22.7% for *common labor*, 23.1% for *skilled labor*, and 25.7% for *women*. In June, 1921 the percentage increases over 1914 for these three groups were respectively 87%, 76% and 67%.

It will be noted that the composite index number for both hourly and weekly earnings was lower in various periods than the index numbers for the three groups separately in the same periods. This was due to the fact that the distribution in the groups varied from month to month and was different from the distribution in 1914. The total working force, total payroll and hours modified the composite figures in a slightly different way than the figures for each of the three groups.

In general, hourly earnings have decreased less than in most

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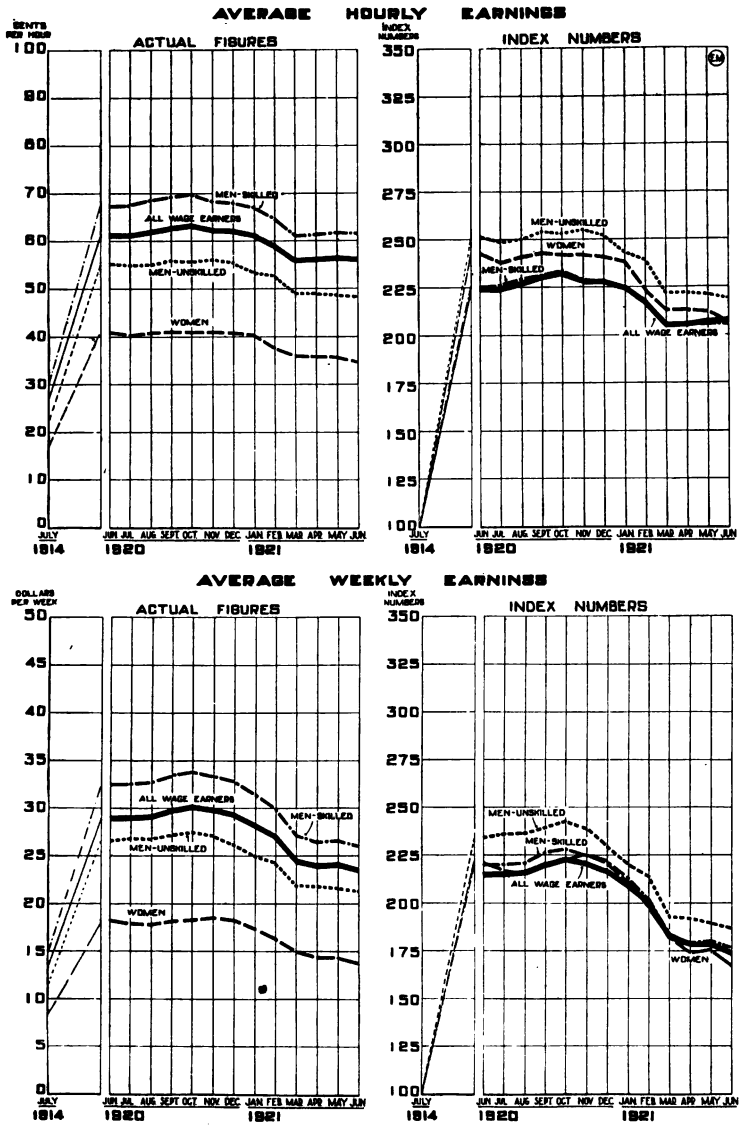

(National Industrial Conference Board)

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914 1921 Estab.	Total All Estab.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings Hrly.	Index Nos. Earnings Wkly.
1914									
July*	*42,114*	*42,114*	*49.5*	*53.7*	*53.6*	*$.272*	*$13.48*	*100*	*100*
1920									
June	71,082	85,248	47.4	49.1	50.0	.610	28.91	224	215
July	71,881	86,360	47.5	49.0	50.0	.610	28.96	224	215
Aug.	70,993	86,151	47.1	48.9	50.0	.617	29.07	227	216
Sept	71,441	87,263	47.5	49.0	50.0	.625	29.67	230	220
Oct.	72,147	88,225	47.7	49.1	50.0	.630	30.04	232	223
Nov	71,680	86,815	47.9	48.8	50.0	.621	29.77	228	221
Dec.	70,122	84,171	47.2	48.5	50.0	.619	29.25	228	217
1921									
Jan.	65,699	78,116	46.0	48.0	50.2	.612	28.20	225	209
Feb.	58,680	69,580	45.6	47.2	50.1	.590	26.91	217	200
March	55,210	65,462	43.9	47.2	50.1	.558	24.49	205	182
April	50,817	60,673	42.8	47.1	50.1	.559	23.92	205	178
May	47,921	57,516	42.8	46.8	50.1	.562	23.99	207	178
June	45,525	54,829	41.9	46.9	50.1	.560	23.49	206	174

*1914-1921 establishments only. See pp. 3, 5.

basic industries covered in this investigation. The slight decline is in sharp contrast with decreases in contingent metal trades. However, while hourly earnings have decreased moderately, reductions in weekly earnings are above the general average in many industries. The drop in weekly earnings has been the result of extensive part-time operations.

Employment

The total decline in employment from the peak in October, 1920 up to July, 1921 was 38%. The general trend shows an increase of 3.5% in total employment from June to October, 1920, followed by large reductions, particularly at the beginning of 1921. The decline from the high point of employment up to July, 1921, by groups, was as follows: unskilled labor, 46%; skilled labor, 34%; women, 48%. The

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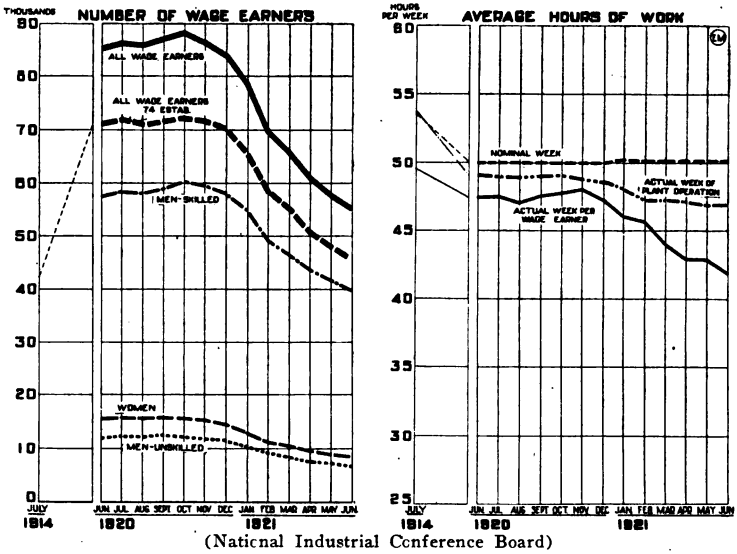

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decline in the number of women employed indicates a general movement of women to return to homes and other occupations from wartime employment.

The electrical manufacturing industry expanded tremendously between July, 1914, and the general peak in 1920. The number of people employed in identical establishments increased 71%. Comparison of employment in 1921 with 1914 shows a slight increase, but due recognition must be given to the effect of the tremendous expansion of the industry up to the peak in 1920. The large decline in total employment reflects clearly the effect of the industrial depression upon the electrical manufacturing industry. The movement of the industry shows large reductions in working forces, accompanied by part-time operations, rather than a large amount of wage cutting.

Hours

The average hours of the *nominal week* in July, 1914 were 53.6. A general reduction of working hours took place during the war period, and in June, 1920 they had fallen to 50 hours per week. This nominal week remained practically stationary up to July, 1921.

The *hours of plant operation* showed a reduction from 53.7

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in July, 1914, to 49.1 in June, 1920. The latter average was generally maintained till the close of 1920, when a decline set in, which continued up to July, 1921, the average being 46.9 hours at the latter period.

The *actual week per wage earner* shows a decline from 49.5 hours in July, 1914 to 47.4 hours in June, 1920. This obviously follows the trend of reduction in the actual week of plant operation and in the nominal week. A decline in the actual week per wage earner started in January and continued through June, the average wage earner working in the latter period 4.1 hours less per week than at the beginning of the year. The greatest loss occurred in the skilled group, who worked an average of six hours less per week in June, 1921 than a year previously. A careful analysis of the chart of "Average Hours of Work" reveals the industrial and economic situation in this industry most distinctly.

Conclusion

1. Decrease in hourly earnings has been slower than in most basic industries, though part-time operations have forced large reductions in weekly earnings. The entire wage situation is dominated by the decline in employment and loss of hours in plant activity.

2. Total employment declined 38% from the peak in October, 1920 to the middle of 1921.

3. There was a total increase of 71% in employment in identical establishments between July, 1914 and October, 1920. Total employment in June, 1921 was only slightly above that for July, 1914. The large drop in employment did not quite bring the number of wage earners employed in the industry down to the 1914 level.

4. The length of the nominal week declined about three and one half hours from July, 1914 up to July, 1921.

5. The hours of plant operation closely follow the trend in the hours of the nominal week from July, 1914 to July, 1920. Since the beginning of 1921, there was practically a continual depression in plant activity, bringing the level down to slightly over 47 hours per week.

6. There was a loss in potential working time of five hours per wage earner in June, 1921.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*5,502*	*51.6*	*$.220*	*$11.33*	*100*	*100*	*31,334*	*49.3*	*$.299*	*$14.74*	*100*	*100*	*5,278*	*48.8*	*$.169*	*$8.24*	*100*	*100*
1920																		
June.....	11,970	48.0	.552	26.50	251	234	57,447	48.1	.673	32.36	225	220	15,831	44.5	.410	18.24	243	221
July.....	12,258	49.0	.548	26.79	249	236	58,169	48.0	.676	32.46	226	220	15,933	44.4	.403	17.89	238	217
Aug.....	12,172	48.5	.550	26.72	250	236	58,090	47.8	.684	32.65	229	221	15,889	43.6	.407	17.75	241	215
Sept.....	12,324	48.6	.558	27.10	254	239	58,985	48.2	.692	33.34	231	226	15,954	44.1	.410	18.08	243	219
Oct.....	12,110	49.2	.557	27.43	253	242	60,248	48.2	.698	33.66	233	228	15,867	44.6	.409	18.25	242	222
Nov.....	11,964	48.3	.561	27.08	255	239	59,452	48.6	.684	33.23	229	225	15,399	45.3	.409	18.53	242	225
Dec.....	11,481	47.0	.555	26.07	252	230	58,067	47.9	.682	32.67	228	222	14,623	44.6	.407	18.17	241	221
1921																		
Jan.....	10,217	46.7	.534	24.92	243	220	54,996	46.6	.672	31.35	225	213	12,903	43.1	.403	17.36	238	211
Feb.....	9,080	46.1	.526	24.24	239	214	49,220	46.0	.648	29.83	217	202	11,280	43.2	.377	16.29	223	198
March...	8,393	44.8	.488	21.83	222	193	46,564	44.3	.612	27.12	205	184	10,505	41.6	.360	14.97	213	182
April.....	7,582	44.6	.488	21.77	222	192	43,496	43.1	.613	26.40	205	179	9,595	40.0	.360	14.37	213	174
May.....	7,135	44.2	.486	21.44	221	189	41,572	43.0	.616	26.46	206	180	8,809	40.1	.359	14.40	212	175
June.....	6,687	44.0	.482	21.20	219	187	39,841	42.1	.615	25.90	206	176	8,301	39.4	.349	13.77	207	167

* 1914-1921 establishments only. See pp. 3, 5.

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7. The industry has been affected as greatly by economic depression as any basic industry. The method of procedure by management to meet conditions has resulted in a tremendous decline in employment and a large amount of part-time operations. Wage conditions have been directly influenced by these factors.

8. The wage and employment declines in the industry are smaller than in related metal trades, such as the foundry and machine-shop group, automobiles and agricultural implements.

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V

IRON AND STEEL MANUFACTURING

The wage investigation in the iron and steel industry includes blast furnaces and rolling mills, engaged in the manufacture of pig iron, wrought iron and rolled steel products. Schedules were received from 70 plants, employing 51,864 wage earners at the high point in October, 1920. While no schedules were received from plants controlled by the United States Steel Corporation, the report is representative of conditions in independent plants. The geographical distribution within 14 states is as follows:

California	2	New Jersey	2
Connecticut	1	New York	1
Illinois	4	Ohio	19
Indiana	2	Pennsylvania	27
Kentucky	2	Tennessee	1
Michigan	1	West Virginia	6
Massachusetts	1	Wisconsin	1

Manufacturing conditions in the iron and steel industry make impossible the compilation of information similar to that for other industrial groups contained in this report. In iron and steel plants the varying hours of work, the irregular shift system, the mixture of piece, day and tonnage work, prevents the accurate compilation of wage data covering the actual hours of work per wage earner, hourly earnings, or the hours of the regular work week. The data for the general group of 70 plants covered in the report has, therefore, been confined to a discussion of weekly earnings, plant hours and employment. Fifty-four of the 70 plants furnished accurate data covering the actual week per wage earner, hourly and weekly earnings. The latter group, therefore, has been put in the table covering general classified material.

Wages

(a) *Hourly earnings:* The study of hourly earnings has been confined to data furnished by 54 plants. Composite hourly earnings of *all wage earners* in 54 plants showed an in-

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crease of 201% from July, 1914 to November, 1920, and declined 29.7% from the latter period up to July, 1921, leaving a net increase of 112%. In these plants, the hourly earnings of *common labor* showed an increase of 185% from July, 1914 to July, 1920, while those of *skilled labor* showed an increase of 206% in November, 1920. The declines for these two groups from the peak months up to July, 1921, were 25% for *common labor* and 29.8% for *skilled labor*. The most marked decreases took place at the beginning of 1921 and sharp declines occurred in June. In June, 1921, the hourly earnings of *common labor* were still 113% above 1914 and those of *skilled labor*, 115%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* in 70 plants increased 190% from July, 1914, to August, 1920, and declined 48.1% from the latter period up to July, 1921, leaving a net increase of 50% in June. Weekly earnings were well maintained through November, 1920, but beginning in December sharp declines occurred. The spring months were characterized by large declines, chiefly due to the shutting down of many blast furnaces.

In 54 plants the weekly earnings of *common labor* increased 192% from July, 1914 to October, 1920, while those of *skilled labor* had increased 226% in August, 1920. The percentages of decline for the two groups from the peak months up to July, 1921, were 43.3% for *common labor* and 53.1% for *skilled labor*. In June, 1921, the weekly earnings of *common labor* were still 66% above 1914, while those of *skilled labor* were 53% above 1914. The amount of decline in weekly earnings has been more extensive than in any other basic industry. This has been due chiefly to curtailment of plant activity and the shutting down of many blast furnaces and rolling mills. The cessation of domestic and foreign demand in metal trades is, perhaps, the most direct cause of industrial stagnation.

Employment

The total number of wage earners employed in 70 plants decreased 48% from October, 1920 up to July, 1921. Unemployment began in November, 1920, followed by further reductions in December and January, 1921. Slight improvement was noted in March and again in May, but the un-

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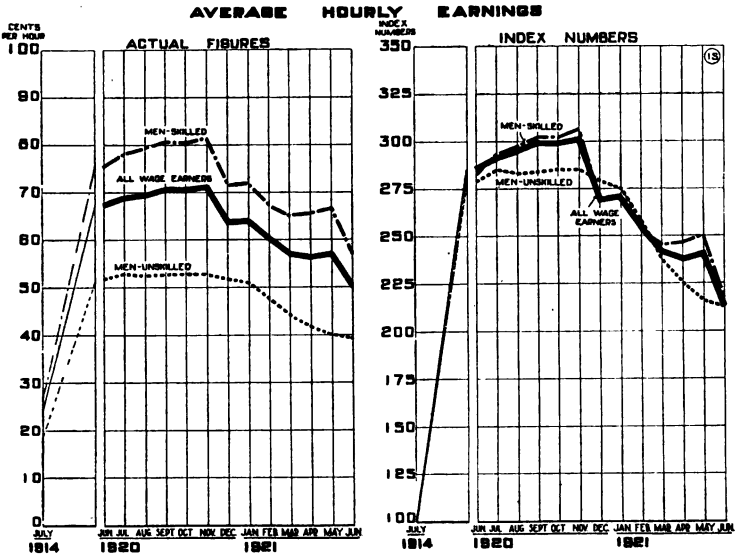

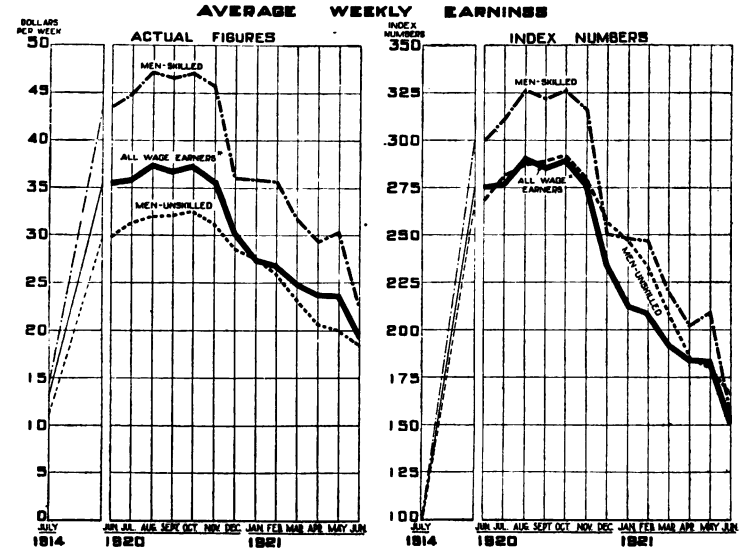

(National Industrial Conference Board)

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Composite Payroll Data

(70 Plants)

Period	No. Wage Earners Employed		Average Hours		Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week per Wage Earner	Av. Hours Plant Operation	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings Hrly.	Index Nos. Earnings Wkly.
1914								
July*	*17,885*	*17,885*	*56.4*	*115.1*	*$.236*	*$12.90*	*100*	*100*
1920					**		**	
June	31,549	51,460	57.7	126.5	.672	35.45	285	275
July	28,152	49,304	58.3	131.2	.689	35.79	292	277
August	28,056	50,056	60.1	132.2	.696	37.35	295	290
September	28,105	50,443	59.0	128.9	.705	36.76	299	285
October	29,012	51,864	59.6	128.1	.705	37.22	299	289
November	27,320	49,234	57.1	121.7	.711	35.62	301	276
December	22,511	38,829	52.3	123.6	.636	30.14	269	234
1921								
January	20,162	33,797	51.5	121.4	.639	27.37	271	212
February	18,486	28,480	53.4	121.6	.601	26.77	255	208
March	18,234	29,217	50.2	110.5	.568	24.82	241	192
April	15,241	25,536	46.5	96.6	.561	23.74	238	184
May	16,016	28,676	47.1	105.1	.569	23.61	241	183
June	14,865	26,970	41.6	96.3	.500	19.38	212	150

*1914-1921 establishments only. See pp. 3, 5.
**54 plants only.

certain condition of the metal market unquestionably caused these fluctuations.

In 54 plants *common labor* decreased 52.9% from June, 1920 up to July, 1921, while *skilled labor* declined 57.5% during the same period. The depression period, therefore, has affected the *skilled* group even more severely than *common labor*.

In the 40 identical plants that furnished information for 1914-1921, there was an increase of 76.4% in employment between July, 1914 and June, 1920. However, the low activity of industry in July, 1914, must be considered, and the above percentage does not reflect the normal expansion of the industry during the six-year period. In June, 1921, the total

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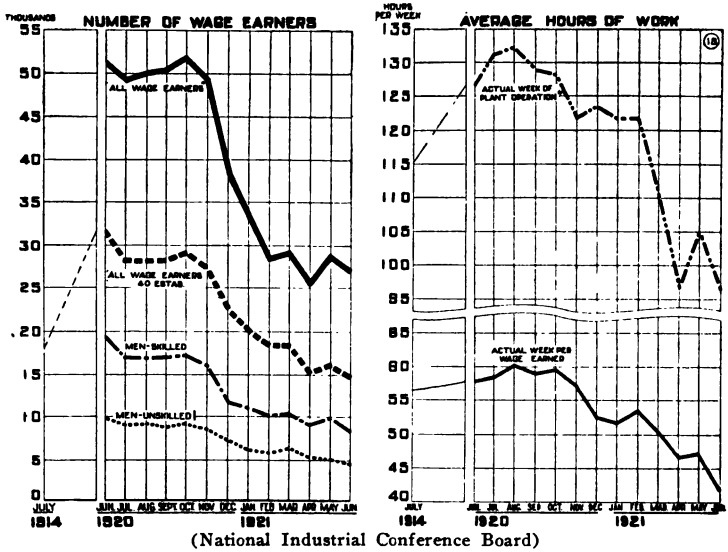

(National Industrial Conference Board)

number of people employed in identical establishments was 16.9% lower than in July, 1914. The industrial depression, therefore, had driven this industry below the 1914 level.

Hours

Average hours of the nominal week can not be calculated, as there is a great variety in standard hours, ranging from 60 to 84 per week.

Iron and steel manufacturing is primarily an industry of continuous operation. The standard week of production would, therefore, be 168 hours. The full productive week, however, generally ranges from 144 to 168 hours. In July, 1914 the *average hours of plant operation* were 115.1. This was a period of depression. In June, 1920 the hours of plant operation had increased to 126.5 per week and the summer and early fall of 1920 saw an even greater increase in plant activity. The closing months of 1920 were characterized by considerable depression, but it was not until the spring of 1921 that industrial stagnation became severe. In March, plant hours had fallen to 110.5 per week and in April they went to a still lower level of 96.6 hours. May was characterized by a temporary revival to 105.1 hours, but June again showed depression to

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96.3 hours. The condition of the industry is thus clearly reflected in the analysis of the hours of plant operation.

The *average week per wage earner* in 54 plants was 56.4 hours in July, 1914. In June, 1920 the hours increased to 57.7, and continued at a high level through November. In 1921, the hours continually shrank till June, when there was a decline to 41.6 hours. In 54 plants the average work week for common labor in 1914 was 60 hours. The summer of 1920 witnessed even longer hours, but beginning in December, there were marked decreases which became increasingly severe during the early months of 1921. In June, 1921, the unskilled wage earner was working 46.7 hours.

In 54 plants, the skilled wage earner was working 54.4 hours in July, 1914—this condition being the result of the temporary industrial depression at this time. The summer of 1920 saw the skilled wage earner working longer hours, ranging up to 59.6 hours in August. The winter of 1920-1921 saw marked declines which were well sustained during 1921, the trough period of 38.7 hours being reached in June, 1921.

Conclusion

1. The decline in hourly earnings has been well above the general average in basic industries, particularly in the skilled group.

2. The decline in weekly earnings has been more extensive than in other industries covered by this investigation. This is due to a combination of reductions in plant activity, working hours, and hourly rates.

3. The decline in employment is practically parallel with that found in manufacturing metal trades and has been continuous during 1920-1921. Skilled labor has been more seriously affected by unemployment than common labor. In June, 1921, fewer wage earners were employed than in the depression period of 1914.

4. The hours of plant activity increased from 115.1 in July, 1914, a period of depression, to 126.5 in June, 1920. A large amount of unfilled orders and general prosperity maintained activity through October, 1920. The industrial depression, however, forced the plant hours to the abnormally low level of 96.3 hours in June, 1921.

5. The average week per wage earner increased from 56.4

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Classified Payroll Data

(54 Plants)

PERIOD	MALE UNSKILLED						MALE SKILLED					
One Week in	No. Wage-Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Numbers: Hourly Earnings	Index Numbers: Weekly Earnings	No. Wage-Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Numbers: Hourly Earnings	Index Numbers: Weekly Earnings
1914												
July*	*4,495*	*60.0*	*$.185*	*$11.11*	*100*	*100*	*8,269*	*54.4*	*$.266*	*$14.45*	*100*	*100*
1920												
June	9,874	57.7	.516	29.74	279	268	19,462	57.7	.751	43.33	282	300
July	9,111	59.3	.527	31.25	285	281	16,963	57.8	.779	44.99	293	311
August	9,119	61.0	.523	31.93	283	287	16,939	59.6	.791	47.14	297	326
September	8,799	61.1	.526	32.14	284	289	17,040	58.0	.803	46.55	302	322
October	9,115	61.6	.527	32.49	285	292	17,308	58.6	.803	47.06	302	326
November	8,575	59.1	.527	31.14	285	280	16,044	56.0	.815	45.66	306	316
December	7,229	55.3	.517	28.55	279	257	11,748	50.5	.715	36.06	269	250
1921												
January	6,137	54.1	.508	27.47	275	247	11,019	50.0	.718	35.87	270	248
February	5,783	54.3	.477	25.92	258	233	10,112	52.9	.674	35.66	253	247
March	6,289	52.6	.440	23.14	238	208	10,351	48.8	.651	31.77	245	220
April	5,313	49.4	.417	20.62	225	186	9,065	44.8	.654	29.25	246	202
May	5,075	50.1	.400	20.05	216	180	9,787	45.5	.665	30.27	250	209
June	4,649	46.7	.395	18.43	213	166	8,279	38.7	.572	22.12	215	153

* 1914-1921 establishments only. See pp. 3, 5.

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hours in July, 1914 to 57.7 hours in June, 1920. By June, 1921, the average wage earner was working over sixteen hours less than in the preceding June. The wage earner in this industry has, therefore, been affected most severely by part-time operations during the depression period.

6. While there has been extensive reduction in both weekly and hourly earnings in this industry, the cessation of domestic demand and foreign consumption seems to point to a severely depressed condition of the industry in the middle of June, 1921.

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VI

COTTON MANUFACTURING

A. North

Cotton manufacturing varies so widely between northern and southern states that separate classification has been made. Wage investigation of the northern cotton mills is confined to establishments engaged in spinning and weaving and finishing of cotton fabrics. Returns were received from 73 plants employing 52,758 wage earners at the high point in June, 1920. Women were employed in 72 of these establishments. The geographical distribution within 10 states is as follows:

Connecticut	7	New Hampshire	6
Illinois	1	New York	4
Massachusetts	36	New Jersey	1
Maine	3	Pennsylvania	5
Missouri	1	Rhode Island	9

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* showed an increase of 211% from July, 1914 up to July, 1920. The decline from the latter period up to July, 1921 was 22.1%, leaving a net increase of 142%. During the months of 1920 there was only a slight decline in hourly earnings. At the beginning of 1921 there was an average cut of almost ten cents per hour, amounting to over 18%. The decline since January, 1921, has been moderate and gradual throughout the period.

In October, 1920, the hourly earnings of *common labor* were 195% above 1914. In June, those of *skilled labor* showed an increase of 213% and those of *women*, 215%. The percentages of decrease for the three groups from their respective peaks up to July, 1921, were: *common labor*, 22.2%; *skilled labor*, 20.9%; *women*, 24.4%.

In June, 1921, the hourly earnings of *common labor* were 129% above 1914, those of *skilled labor*, 148%, and those of *women*, 138%.

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(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* showed an increase of 190% between July, 1914, and June, 1920, and from the latter period up to July, 1921, declined 28.4%, leaving a net increase of 107%. The decline in weekly earnings was gradual through September, 1920. Beginning in October, due to extensive reduction in working hours, weekly earnings began to decrease rapidly. This movement continued through the closing months of 1920, becoming marked in January, 1921, when extensive cuts in hourly rates were made. Beginning in February, 1921, there was a tendency to increase in weekly earnings, due to longer working hours. Hourly earnings during this period, however, continued to drop.

The peak of weekly earnings for all three groups was reached in June, 1920. At that time the earnings of *common labor* showed an increase of 184% over July, 1914, those of *skilled labor*, 192% and those of *women*, 191%. The percentages of decline for these three groups from June, 1920 up to July, 1921 were: *common labor*, 27.6%; *skilled labor*, 27.7%; *women*, 30.1%. In June, 1921 the weekly earnings of *common labor* were 105% above 1914, those of *skilled labor*, 111% and those of *women*, 104%.

Employment

The decline in total number of wage earners employed, from June, 1920 up to July, 1921, was 14.2%. The trough period of employment occurred in December, 1920, when there was a decrease of 26.1% from June, 1920. The increase, during 1921, from the depression point, amounted to 16.2%. By far the greatest reduction in workers has occurred among the female wage-earning group, evidently pointing to return of women from wartime employment to domestic occupations.

Total employment increases in identical establishments between July, 1914 and June, 1920, were 10.5%. This reflects the normal expansion of the industry. While the subsequent reduction in employment has been extensive, it does not present so severe a problem as that in many other basic industries. However, in June, 1921, in identical establishments, employment had shrunk below the 1914 level.

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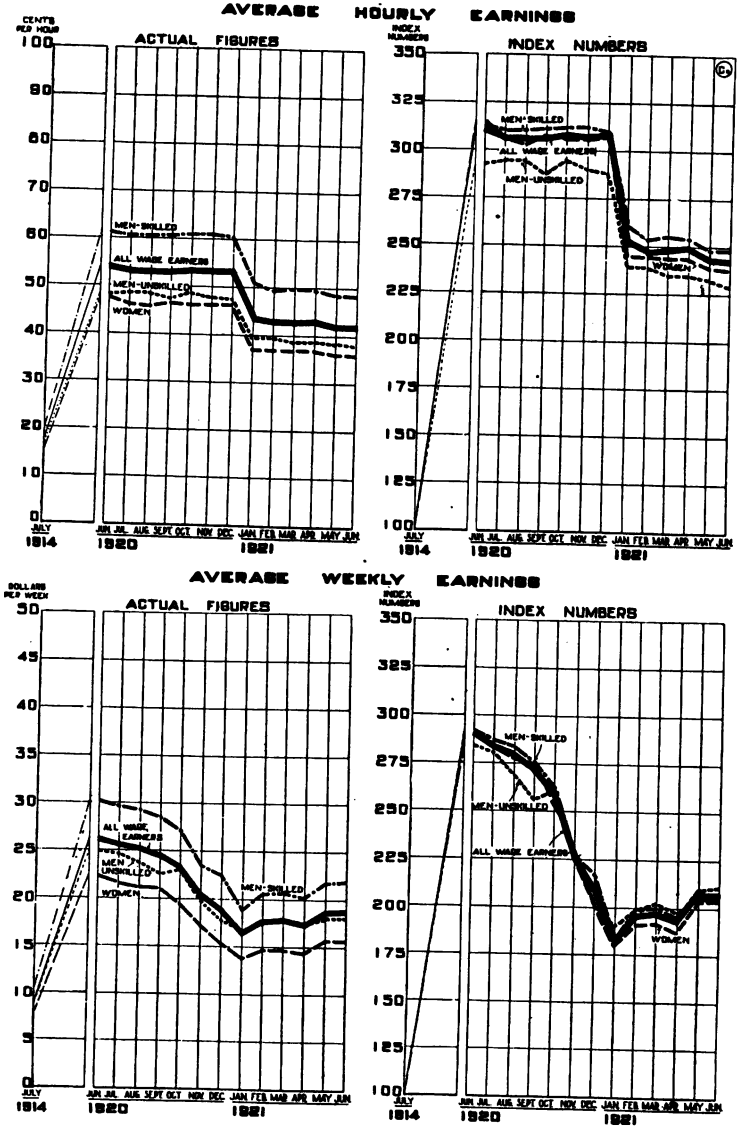

(National Industrial Conference Board)

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Opera-tion	Nom-inal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
								Hrly.	Wkly.
1914									
July*	*43,445*	*43,445*	*52.0*	*53.6*	*55.7*	*$.173*	*$9.02*	*100*	*100*
1920									
June	47,986	52,758	48.6	48.9	50.0	.538	26.14	311	290
July	47,723	52,385	48.2	49.0	50.0	.530	25.56	306	283
Aug.	45,531	50,031	47.6	48.5	50.0	.529	25.20	306	279
Sept	45,565	49,745	46.4	48.1	50.1	.529	24.56	306	272
Oct.	41,424	45,064	43.9	44.4	50.1	.533	23.38	308	259
Nov	39,523	41,268	38.3	38.9	50.1	.532	20.36	307	226
Dec.	37,234	38,965	35.5	36.6	50.2	.533	18.89	308	209
1921									
Jan.	38,346	40,258	37.8	38.7	50.3	.436	16.48	252	183
Feb.	39,927	42,071	41.2	42.0	50.3	.428	17.65	247	196
March	40,362	42,738	41.4	42.5	50.3	.429	17.79	248	197
April	39,908	42,230	40.4	40.3	50.3	.430	17.38	249	193
May	41,906	44,858	44.4	44.4	50.3	.420	18.63	243	207
June	42,222	45,290	44.7	44.8	50.3	.419	18.71	242	207

*1914-1921 establishments only. See pp. 3, 5.

Hours

The average hours of the *nominal week* in July, 1914, were 55.7. In June, 1920, the hours of the nominal week were 50 and the latter standard, with slight increases, was practically maintained up to July, 1921.

The *actual week of plant operation* showed a reduction from 53.6 hours in July, 1914, to 48.9 hours in June, 1920.* The decline in plant activity began in September, became more marked in October, and then reached the depression points during the next three months. The months of 1921 showed marked and continued recovery except for a temporary decline in April, 1921.

The *actual week per wage earner* showed a decline from 52 hours in July, 1914, to 48.6 hours in July, 1920. The acute

*The large decrease in hours during this period is mainly accounted for by the enactment in Massachusetts in 1919 of the 48-hour working week for women.

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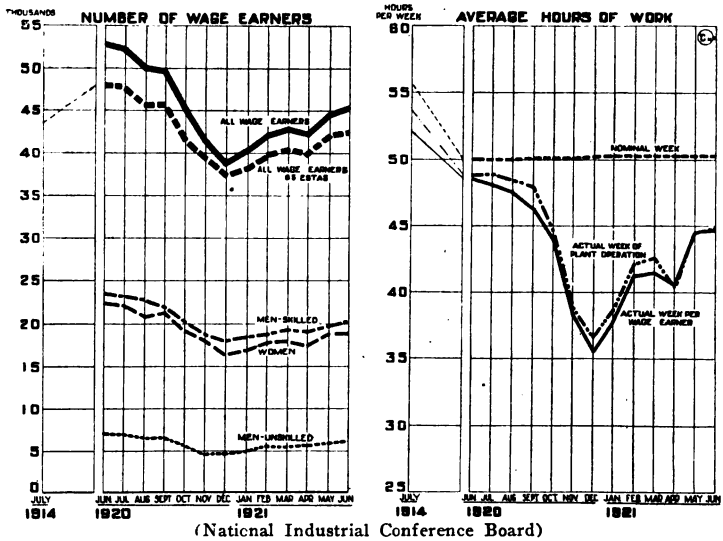

(Naticnal Industrial Conference Board)

industrial depression took effect in November, when there was a drop to 38.3 hours, followed by a further decline in December to a new low level of 35.5 hours. The beginning of 1921 showed a marked increase which was sustained through March. There was a slight relapse in April, followed by a revival in May and June.

The trend of hours shows a gradual decline through the summer of 1920, marked depression during the winter, followed by revival in 1921.

Conclusion

1. Decline in hourly earnings has been extensive and more marked than in other members of the textile group, except in southern cotton mills.

2. Decrease in weekly earnings has been severe, due to a large reduction, not only in hourly rates, but in working hours. Wages have been more affected by rate cutting than by part-time operations.

3. The industry, as a whole, showed a decline through 1920, marked depression in the winter of 1920-1921 and a general sustained recovery in the spring of 1921. Earlier readjustment brought the industry to a better condition in 1921 than is found in many other basic industries. However, the particular conditions in the cotton market have had a direct effect upon productive activity within manufacturing plants.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*5,400*	*53.2*	*$.165*	*$8.80*	*100*	*100*	*19,898*	*52.9*	*$.195*	*$10.32*	*100*	*100*	*18,147*	*50.7*	*$.151*	*$7.66*	*100*	*100*
1920																		
June.....	7,018	51.8	.482	24.98	292	284	23,415	49.3	.611	30.14	313	292	22,325	46.9	.476	22.32	315	291
July.....	6,949	50.8	.485	24.66	294	280	23,277	48.9	.605	29.62	310	287	22,159	46.7	.462	21.58	306	282
Aug.....	6,603	48.9	.485	23.72	294	269	22,681	48.5	.604	29.29	310	284	20,747	46.3	.458	21.20	303	277
Sept.....	6,533	47.6	.474	22.57	287	256	22,002	47.1	.606	28.52	311	276	21,210	45.2	.465	21.05	308	275
Oct.....	5,652	47.3	.486	23.01	295	261	20,278	44.5	.609	27.14	312	263	19,134	42.2	.462	19.50	306	254
Nov.....	4,585	41.5	.478	19.82	290	225	18,894	38.4	.609	23.42	312	227	17,789	37.3	.462	17.24	306	226
Dec.....	4,599	37.4	.475	17.78	288	202	17,959	37.1	.604	22.41	310	217	16,407	33.2	.463	15.36	307	200
1921																		
Jan.....	4,902	42.5	.394	16.74	239	190	18,423	37.1	.509	18.88	261	183	16,933	37.2	.370	13.78	245	180
Feb.....	5,532	44.4	.395	17.55	239	199	18,817	41.6	.493	20.50	253	199	17,722	39.8	.368	14.64	244	191
March...	5,461	46.1	.387	17.82	235	202	19,330	41.6	.497	20.64	255	200	17,947	39.9	.368	14.70	244	192
April.....	5,554	45.0	.388	17.44	235	198	19,206	40.5	.496	20.12	254	195	17,470	38.8	.369	14.34	244	187
May.....	5,986	46.9	.385	18.06	233	205	19,957	44.7	.484	21.66	248	210	18,915	43.3	.361	15.61	239	204
June.....	6,055	47.8	.378	18.08	229	205	20,359	45.1	.483	21.78	248	211	18,876	43.4	.360	15.61	238	204

* 1914-1921 establishments only. See pp. 3, 5.

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B. SOUTH

As in the northern cotton mills, this wage investigation among cotton manufacturing plants in the southern states is confined to establishments engaged in spinning and weaving and finishing of cotton fabrics. The geographical distribution among 10 southern states is as follows:

Alabama	3	North Carolina	2
Georgia	6	South Carolina	14
Kentucky	1	Tennessee	5
Mississippi	1	Texas	2
Maryland	2	Virginia	2

Returns were received from 38 plants, employing 18,781 wage earners at the high point in September, 1920. Women were employed in all of the establishments.

Any comparison of wages in northern and southern cotton mills must take into consideration the differences in living conditions in the two sections of the country. In the average southern cotton mill town, company houses and accompanying facilities are usually provided by the operators, at a nominal price, while in northern cotton manufacturing centers, such provisions are generally not made. This additional compensation in southern mills must, therefore, be considered in any discussion of comparative wages.

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* show an increase of 222% from July, 1914 to October, 1920. The decline from the latter period up to July, 1921 was 31.8%. In June, 1921, the increase was 120% over July, 1914. There was a slight increase from July, 1920, to October. Marked reductions began to occur in December, amounting to almost five cents per hour, and more moderate declines continued throughout the first six months of 1921.

In September, 1920, hourly earnings of *common labor* had increased 232%, and in October, 1920, those of *skilled labor* showed an increase of 242%, and those of *women* 198%, over July, 1914. The decline for each of these groups from the peak

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months up to July, 1921 was as follows: *common labor*, 32.8%; *skilled labor*, 33.5%; *women*, 31.2%. In June, 1921, *common labor* showed an increase in hourly earnings of 123%, *skilled labor*, 127%, and *women*, 105%, over July, 1914.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 192% from July, 1914 to July, 1920, and from the latter period up to July, 1921, declined 32.5%, leaving a net increase of 97% up to the middle of 1921. The trend shows moderate declines through November, with a sharp reduction occurring in December, amounting to approximately $2.28 a week, or 12%. The year 1921 was marked by a further decline in weekly earnings, caused by the reduction of hourly earnings rather than by curtailment of working hours.

The high point of weekly earnings of *common labor* was reached in September, 1920, when the increase shown over July, 1914, was 203%. The peak for *skilled labor* and *women* was reached in July, 1920, when increases of 211% and 167% over the 1914 level were indicated. The declines from these peaks up to July, 1921 for the three groups, were as follows: *common labor*, 36.4%; *skilled labor*, 33.7%; *women*, 30.8%. In June, 1921, *common labor* was 93% above 1914, *skilled labor*, 106%, and *women*, 85%.

Employment

The total employment decreased 7.9% between the peak in September, 1920, and June, 1921. The period of greatest reduction was reached in January, when there were approximately 13% fewer wage earners employed than in the preceding September. A revival of production caused an increase between January and June, 1921, of over 5% in numbers employed. Among the three groups, the greatest amount of decline has occurred among women, where the decrease between September, 1920 and June, 1921, amounted to 16.8%.

The total number of employees in identical establishments increased 11.2% from July, 1914 up to July, 1920. In June, 1921, the increase over 1914 was 6.9%.

Relatively speaking, the employment problem in southern cotton mills is unimportant, the amount of decline being negligible in comparison with general conditions. The industry showed a normal growth between 1914 and 1920.

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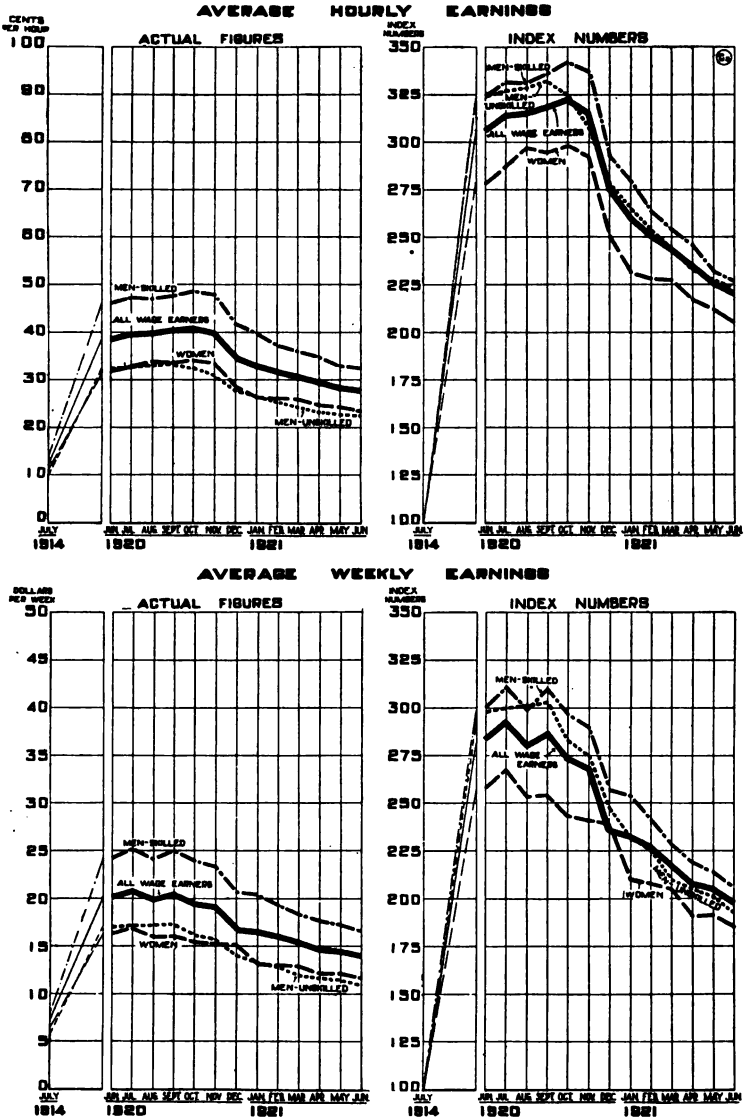

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*	*12,601*	*12,601*	*56.3*	*58.8*	*58.8*	*$.126*	*$7.10*	*100*	*100*
1920									
June	14,012	18,262	52.1	55.1	55.6	.385	20.09	306	283
July	14,087	18,362	52.4	54.7	55.6	.395	20.72	314	292
Aug.	14,079	18,745	50.0	55.0	55.6	.397	19.87	315	280
Sept	14,006	18,781	50.6	54.4	55.6	.401	20.31	318	286
Oct.	13,158	17,824	47.8	51.0	55.6	.406	19.41	322	273
Nov	13,128	17,533	48.0	51.0	55.6	.397	19.05	315	268
Dec.	12,870	17,111	48.4	50.8	55.6	.346	16.77	275	236
1921									
Jan	12,575	16,398	50.6	52.1	55.6	.327	16.51	260	232
Feb.	13,382	16,977	50.9	52.6	55.6	.315	16.02	250	226
March	13,296	16,934	50.4	52.2	55.6	.306	15.43	243	217
April	13,161	16,753	49.9	51.7	55.6	.295	14.71	234	207
May	13,103	16,998	51.1	52.6	55.6	.283	14.48	225	204
June	13,473	17,294	50.6	52.3	55.6	.277	13.99	220	197

*1914-1921 establishments only. See pp. 3, 5.

Hours

The hours of the *nominal week* in July, 1914 were 58.8. In June, 1920, they had decreased to 55.6. The latter standard continued throughout 1920-1921.

The average *hours of plant operation* were reduced from 58.8 in July, 1914, to 55.1 in June, 1920. The depression began to take effect in October, when there was a decline of over three hours from September, and continued throughout the remaining months of 1920. In 1921, marked stimulation occurred, except for a slight slump during April. In general, plant activity has continued fairly well during the adverse industrial conditions.

The *actual week per wage earner* showed a decline from 56.3 hours in July, 1914, to 52.1 hours in June, 1920. The decline in actual hours began in August and further sharp reduction occurred in October. The closing months of 1920 were a

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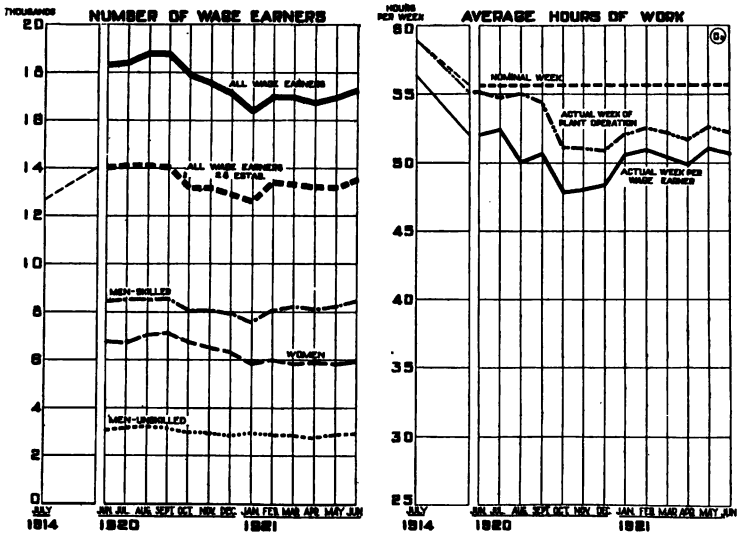

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depression period, but the beginning of the new year showed marked revivals in working hours. There were fluctuations in the spring months undoubtedly caused by the unsettled condition of the cotton market. However, reduction of working hours has affected the wages of the average employee little in comparison to wage decreases.

Conclusion

1. Decline in wages has been more extensive than in any other members of the textile group, and far beyond that of the average basic industry.

2. While extensive reductions, amounting to approximately 32% in both hourly and weekly earnings, occurred during 1920-1921, the large wage increases between 1914 and the peak in 1920 left the average wage earner comparatively well off in June, 1921.

3. The employment decline of 8% has been relatively unimportant, and 1921 has witnessed a slight increase in employment.

4. Reduction in working hours has affected earnings slightly in comparison with wage cutting.

5. The depression period occurred at the close of 1920, and 1921 has indicated a readjustment on a more permanent basis.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*2,011*	*56.9*	*$.100*	*$5.70*	*100*	*100*	*6,362*	*56.9*	*$.142*	*$8.07*	*100*	*100*	*4,228*	*55.2*	*$.114*	*$6.31*	*100*	*100*
1920																		
June.....	3,048	52.4	.324	16.97	324	298	8,483	52.7	.460	24.22	324	300	6,731	51.4	.317	16.29	278	258
July.....	3,143	52.4	.327	17.13	327	300	8,516	53.2	.472	25.10	332	311	6,703	51.5	.327	16.85	287	267
Aug.	3,197	52.2	.329	17.14	329	301	8,511	51.4	.470	24.13	331	299	7,037	47.4	.337	15.95	296	253
Sept.....	3,114	52.1	.332	17.28	332	303	8,551	52.5	.477	25.00	336	310	7,116	47.8	.335	16.01	294	254
Oct	2,989	49.7	.325	16.16	325	283	8,075	49.4	.486	24.01	342	297	6,760	45.1	.340	15.36	298	243
Nov.....	2,961	50.8	.308	15.67	308	275	8,070	48.8	.479	23.37	337	290	6,502	45.6	.334	15.21	293	241
Dec.....	2,849	50.6	.278	14.09	278	247	7,944	49.7	.416	20.67	293	256	6,318	45.9	.285	15.08	250	239
1921																		
Jan	2,921	50.0	.265	13.25	265	232	7,591	51.3	.398	20.39	280	253	5,886	49.9	.263	13.12	231	210
Feb.....	2,898	50.6	.254	12.84	254	225	8,093	51.8	.375	19.42	264	241	5,986	49.8	.260	12.96	228	208
March...	2,877	49.0	.244	11.97	244	210	8,217	51.2	.360	18.43	254	228	5,840	50.0	.259	12.92	227	205
April.....	2,798	50.1	.233	11.69	233	205	8,105	50.5	.350	17.68	246	219	5,850	48.8	.247	12.05	217	191
May.....	2,882	50.3	.227	11.44	227	201	8,287	52.2	.330	17.23	232	214	5,829	49.9	.242	12.08	212	191
June.....	2,913	49.3	.223	10.99	223	193	8,462	51.6	.323	16.65	227	206	5,919	49.8	.234	11.66	205	185

* 1914-1921 establishments only. See pp. 3, 5.

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VII

WOOL MANUFACTURING

Wage data for this industry were received from establishments engaged in the spinning of woolen and worsted yarns and in the weaving and finishing of woolen and worsted fabrics. Returns were received from 72 establishments, of which all but one employed women. The total number of wage earners at the high point of employment in June, 1921 was 44,385. Approximately 22% of the wage earners listed in the 1919 Census of Manufactures as being employed in this industry were covered in this report. The data are representative in coverage of wage earners and as to distribution and size of establishments involved. The geographical distribution within 18 states is as follows:

California	1	New Hampshire	4
Connecticut	6	New Jersey	5
Illinois	1	New York	3
Iowa	1	Ohio	1
Maine	5	Pennsylvania	7
Maryland	1	Rhode Island	7
Massachusetts	25	Vermont	1
Michigan	1	West Virginia	1
Minnesota	1	Wisconsin	1

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 209% from July, 1914 through June, 1920. The decline from the latter period up to July, 1921 was 17.9%. In June, 1921, the increase was 153% over July, 1914. The period June, 1920 up to July, 1921 has shown a gradual decline from month to month. A wage cut of six cents per hour occurred at the beginning of 1921, when the entire industry was going through a readjustment period. There was a slight rise in hourly earnings at the middle of 1921. In November, 1920, the hourly earnings of *common labor* had increased 196% over July, 1914, and in October *skilled labor* had increased 211%. The peak for *women* occurred in June, 1920, when the increase was 211%. The declines

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from the respective peaks up to July, 1921 amounted to 19.5% for *common labor*, 17% for *skilled labor*, and 18.8% for *women*. In June, 1921, the percentages of increase above July, 1914 for the three groups were respectively, 138%, 158%, 152%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 160% from July, 1914 through June, 1920, and declined from the latter period up to July, 1921, 12.6%, showing in the middle of 1921 a net increase of 128% over July, 1914. The trend during the past year has shown a gradual decline in weekly earnings down through March, 1921. Since then, there has been a marked revival in plant activity, with longer working hours and hence increased weekly earnings. The largest decrease in any one period was noted in November, 1920, when there was a drop of $1.44 in the contents of the average weekly pay envelope.

The high point in weekly earnings for *common labor* was reached in October, 1920, when there was an increase of 154% over 1914. The peak for both *skilled labor* and *women* was reached in June, 1920, when the increases were respectively, 166% and 159%. Declines for the three groups up to July, 1921 amounted to 12.8% for *common labor*, 13.8% for *skilled labor*, and 11.9% for *women*. In June, 1921, *common labor* was 121% above 1914, *skilled labor*, 129% and *women*, 128%. Thus, respective increases of pay for the three groups have been approximately the same.

The readjustment in the wool industry began in the early spring months of 1920. This period is not covered by the present report, but indications are that the amount of decline from the early spring period through June, 1920, was not severe or extensive. The general peak in June, 1920, shown in this study, therefore, probably reflects an approximate general peak for the whole industry. The general course of wages in the past year has shown a gradual tendency downwards. The trough occurred at the beginning of 1921, when there were sharp wage reductions in many of the larger plants. The trend continued downward through March, 1921. A marked revival has occurred since that time.

The amount of decline in wages in the wool industry is below that in cotton manufacturing, but above silk and hosiery manufacturing. Careful analysis of the trends seems to point out the following facts: (1) Readjustment occurred earlier

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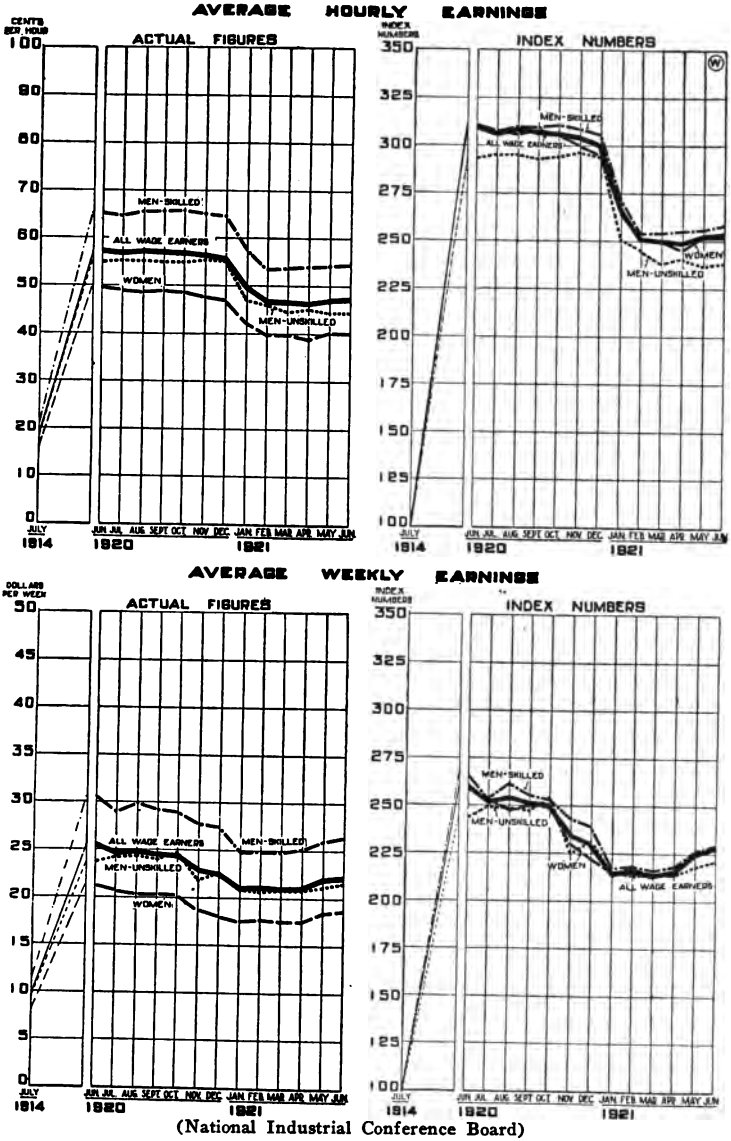

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Composite Payroll Data

Period	No Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*..	*36,891*	*36,891*	*52.8*	*53.3*	*55.1*	*$.185*	*$9.77*	*100*	*100*
1920									
June...	40,116	42,546	44.6	45.2	49.8	.571	25.46	309	260
July...	38,969	41,192	43.6	45.1	49.8	.566	24.67	306	252
Aug....	36,628	38,684	43.7	44.5	49.8	.569	24.88	308	254
Sept...	37,018	39,085	43.3	44.5	49.8	.568	24.58	307	251
Oct....	36,811	38,933	43.2	44.5	49.8	.566	24.46	306	250
Nov...	35,001	36,575	40.9	41.6	49.8	.562	22.98	304	235
Dec....	33,906	35,527	40.6	41.3	49.8	.555	22.52	300	230
1921									
Jan....	33,707	34,911	42.8	44.9	50.0	.493	21.08	266	215
Feb....	35,328	37,149	45.4	47.3	50.1	.465	21.13	251	216
March.	35,271	37,288	45.2	47.1	50.1	.463	20.94	250	214
April...	38,457	40,854	45.8	47.4	50.2	.460	21.07	249	215
May...	40,698	43,195	47.1	48.6	50.2	.467	22.01	252	225
June...	41,651	44,385	47.5	48.6	50.2	.469	22.26	253	228

*1914-1921 establishments only. See pp. 3, 5.

in the wool industry than in most basic industries; (2) general movement in reduction of wages has been gradual; (3) the increases from 1914 in wages for all classes of labor have been approximately the same, and hence the relative position in regard to earnings of the three groups has been unchanged since 1914.

Employment

The total employment in the wool industry increased 4.3% from June, 1920 up to July, 1921. There was a gradual decline of 17.9% from June, 1920 to the trough in January, 1921, and a marked increase from the latter period up to July, 1921, amounting to 27.1%. The whole tendency in employment was toward a marked revival after the beginning of 1921. The increases in the groups, common labor, skilled labor, and women, from June, 1920 up to July, 1921, were respectively 11.8%, 3.6% and 3.3%. The decreases by

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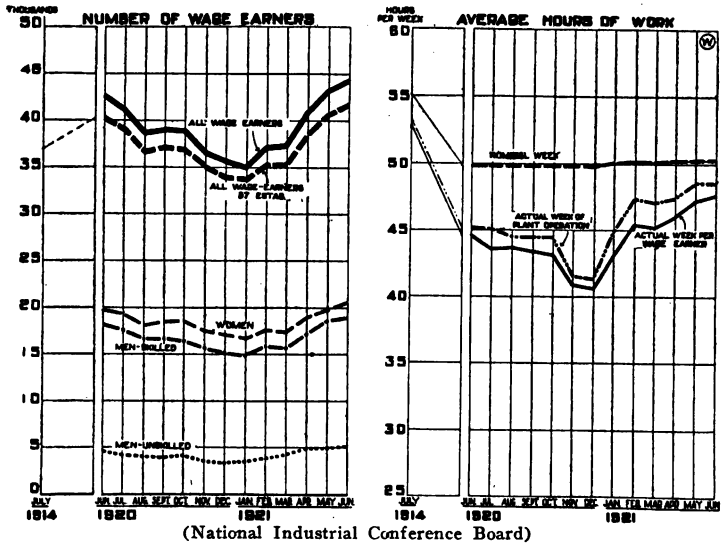

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groups from June, 1920 to the respective troughs were: common labor, 26%; skilled labor, 18%; women, 16%. The increases from the latter periods through June, 1921, were: common labor, 51%; skilled labor, 27%; women, 23%.

The total number of employees in the woolen industry in identical establishments increased 13% from July, 1914 up to July, 1921, when the peak of employment was reached.

Hours

The average hours of the *nominal week* in July, 1914 were approximately 55. Following the general reduction in working hours during the war period, there was a decline to approximately 50 hours in June, 1920. The latter standard was maintained throughout 1920-1921, there being a slight increase toward the middle of the present year.

The *actual week of plant operation* shows a reduction from 53.3 hours in July, 1914 to 45.2 hours in June, 1920. The next months showed slight declines, the decrease going as low as 41.3 hours in December. In January, the start was made toward recovery, there having been an increase in activity of about four hours per plant from December. Plant operation continued to increase through the spring months

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of 1921, reaching 48.6 hours in June. The study of the chart of the actual week of plant operation reflects very closely the industrial condition of the whole industry during the past months. It will be seen readily that early readjustment caused by deflation in prices of raw materials in 1920 influenced quicker resumption of normal plant activity in 1921.

The *average actual week per wage earner* showed a decline from 52.8 hours in July, 1914 to 44.6 hours in June, 1920. The resumption of activity, beginning in February, caused an immediate increase in the actual week per wage earner, so that in June, the average wage earner was working almost seven hours longer per week than at the close of 1920. This increase in actual working hours has increased the weekly earnings in the spring months, but the decline in hourly earnings previous to that time has more than overtaken the increase in weekly earnings due to longer working hours.

It will be noted that, beginning in August and continuing through January, 1921, the hours of the average week per wage earner and the hours of plant operation were quite close together. This is probably due to the fact that many plants were either entirely closed during the summer months or operated on a part-time schedule. The wage earners, however, in the active plants worked approximately the same general average hours. The result of plant shutdowns and part-time operations thus brought the hours of plant activity and the average week per wage earner closer together.

Conclusion

1. Earlier liquidation in prices and wages has resulted in an earlier resumption of activity.
2. Decline in wages has been gradual since the peak in 1920, with a slight increase in wages in the spring of 1921.
3. The wage increases since 1914 have been approximately the same for both skilled men and women.
4. The drop of five hours in the nominal week between July, 1914 and June, 1920 is above the general average for most industries during the same period. It may be accounted for, in part, by the effect of legislation shortening the hours of female wage earners.
5. The trend in the hours of plant activity between 1914

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*3,974*	*52.0*	*$.187*	*$9.75*	*100*	*100*	*15,912*	*54.3*	*$.211*	*$11.48*	*100*	*100*	*17,005*	*51.5*	*$.159*	*$8.18*	*100*	*100*
1920																		
June.....	4,541	43.2	.548	23.66	293	243	18,256	46.8	.652	30.51	309	266	19,749	42.9	.494	21.21	311	259
July.....	4,163	44.0	.551	24.26	295	249	17,688	44.9	.647	29.08	307	253	19,341	42.3	.490	20.72	308	253
Aug.....	3,952	44.1	.551	24.30	295	249	16,653	45.9	.654	29.97	310	261	18,079	41.7	.487	20.31	306	248
Sept.....	3,906	43.9	.548	24.08	293	247	16,696	44.7	.654	29.25	310	255	18,483	41.9	.489	20.46	308	250
Oct.....	4,037	45.1	.549	24.75	294	254	16,383	44.2	.657	29.02	311	253	18,513	41.9	.486	20.35	306	249
Nov.....	3,512	39.7	.553	21.96	296	225	15,582	42.7	.651	27.84	309	243	17,481	39.5	.477	18.84	300	230
Dec.....	3,361	41.0	.550	22.54	294	231	15,131	42.5	.646	27.43	306	239	17,035	38.8	.469	18.16	295	222
1921																		
Jan.....	3,404	44.7	.470	20.99	251	215	14,933	43.4	.575	24.94	272	217	16,574	41.8	.421	17.62	265	215
Feb. ...	3,834	45.2	.459	20.72	245	213	15,810	46.6	.536	24.98	254	218	17,505	44.5	.399	17.73	251	217
March...	4,264	46.8	.445	20.82	238	214	15,607	46.1	.537	24.80	254	216	17,417	44.0	.398	17.52	250	214
April	4,826	46.3	.450	20.84	241	214	17,073	46.6	.538	25.08	255	218	18,955	44.9	.390	17.52	245	214
May.....	4,898	47.9	.443	21.25	237	218	18,536	48.0	.541	25.97	256	226	19,761	46.1	.401	18.49	252	226
June.....	5,075	48.4	.445	21.57	238	221	18,907	48.2	.545	26.30	258	229	20,403	46.6	.401	18.68	252	228

* 1914-1921 establishments only. See pp. 3, 5.

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and 1920 closely followed that of the nominal week. The early lowering of prices quickened plant activity in 1921.

6. A 4% increase in employment during the past year is distinctive in comparison with the huge decline in employment in practically all of American industry.

7. The winter of 1920-1921 was marked by general stagnation, followed by great activity in the spring of 1921.

8. Indications point to a soundly reorganized condition of the industry, including all the factors of employment, working hours and wages.

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VIII

SILK MANUFACTURING

The wage investigation in this industry covers establishments engaged in silk throwing, spinning, weaving and finishing of silk fabrics. Returns were received from 70 plants employing 24,186 wage earners in June, 1921. Women were employed in 68 plants. Approximately 17% of the wage earners listed by the 1919 Census of Manufactures in this industry are covered in this report. The returns come from the centers of silk manufacturing in the eastern states, the geographical distribution in six states being as follows:

Connecticut	6	New York	10
Massachusetts	9	Pennsylvania	27
New Jersey	17	Virginia	1

A very small proportion of common labor is found in the average silk plant. The bulk of production in many plants is by piece work, and hence it is difficult to secure accurate data on hourly earnings. In most establishments it was found that women were paid on the same basis as men, when performing the same kind of work.

Wages

(a) *Hourly earnings*: Composite hourly earnings of *all wage earners* show an increase of 168% from July, 1914 to July, 1920. The decline from the latter period up to July, 1921 was 14.7%. In June, 1921, the increase was 128% over July, 1914. A general peak of hourly earnings was maintained from June to November, 1920. Sharp reductions occurred at the beginning of 1921, amounting to approximately 4½ cents an hour, or 9%. Decline in hourly earnings continued up to July, 1921. In September, 1920, *common labor* showed an increase of 160% over 1914, in July *skilled labor* showed an increase of 162%, and in June and in October, hourly earnings of *women* were 178% above 1914. A decline of approximately 15% occurred for each of the three groups from their respective peaks up to July, 1921.

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In June, 1921, the percentages of increase over 1914 for the three groups were respectively 123%, 123% and 137%.

(b) *Weekly earnings*: Composite weekly earnings of *all wage earners* increased 122% from July, 1914 through June, 1920, and decreased approximately 6% between the latter period and July, 1921 showing a net increase of 109% over July, 1914. There was considerable fluctuation between June and October, 1920. A second peak, slightly lower than that of June, occurred in December and was due principally to longer working hours. The low point in weekly earnings was reached in January, 1921, caused by the reduction in working hours, and there has been a gradual increase in weekly earnings from that time to the middle of the year.

Weekly earnings show a slighter decrease than in other textile industries covered in this investigation. As June, 1920 is the first period after July, 1914 covered in this report, it is quite probable that an early reduction occurred previous to June, 1920, so that the actual decline in earnings is greater than that presented by the accompaning data. It would appear that by the middle of 1921, a tendency toward reconstruction had already set in, marked by an increase in working hours over 1920, and in weekly earnings, while a gradual decline in hourly earnings still continued.

Employment

Total employment increased approximately 3% from June, 1920 up to July, 1921. The period of greatest depression occurred in December, when there was a decline of 24.6% from June, 1920. Between the low point and July, 1921, employment increased 36%. The decline by groups from June, 1920 to the low point was a follows: common labor, 21.6%; skilled labor, 22.5%; women, 28.3%. In June, 1921, as compared with the preceding June, there was a slight increase in numbers employed in both the skilled and female group and a decline in common labor.

The number employed in identical establishments between July, 1914 and June, 1920 was practically unchanged. In June, 1921, compared with July, 1914, there was a slight decline in employment, but the trend indicates a rather stationary condition throughout the years 1914 to 1921.

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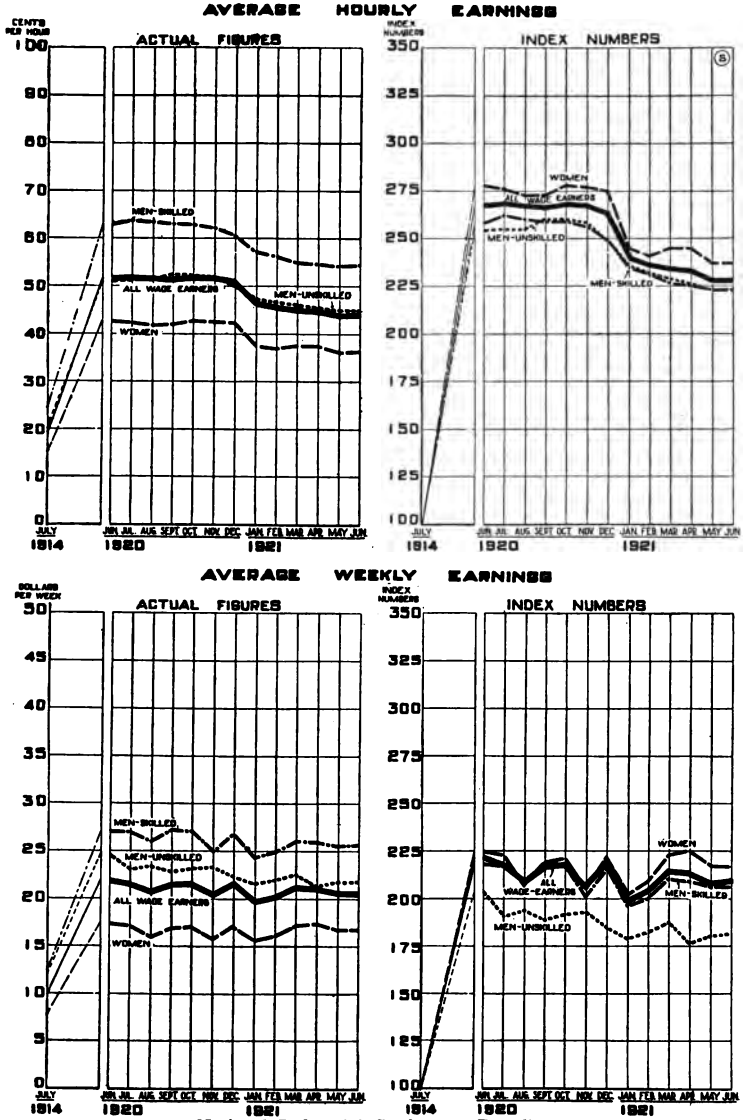

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hrs. Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*....	*15,000*	*15,000*	*51.1*	*54.1*	*54.3*	*$.193*	*$ 9.88*	*100*	*100*
1920									
June.....	15,150	23,514	42.5	46.1	47.9	.516	21.92	267	222
July.....	14,959	22,864	41.8	45.6	47.9	.517	21.58	268	218
Aug.....	14,563	22,266	40.2	44.2	47.9	.515	20.70	267	209
Sept.....	14,003	21,251	41.8	44.1	47.9	.514	21.49	266	217
Oct.....	13,779	20,801	41.7	44.0	47.9	.517	21.56	268	218
Nov.....	12,999	18,640	39.4	40.5	47.9	.516	20.34	267	206
Dec.....	11,908	17,740	42.6	49.1	48.0	.508	21.61	263	219
1921									
Jan.....	11,897	18,651	42.4	49.8	48.5	.464	19.67	240	199
Feb.....	12,357	20,357	44.3	49.9	48.5	.456	20.18	236	204
Mar.....	13,659	22,296	46.8	49.6	48.5	.452	21.15	234	214
April....	14,231	23,358	46.7	49.6	48.5	.449	21.00	233	213
May.....	14,372	23,914	46.8	51.7	48.5	.440	20.59	228	208
June.....	14,491	24,186	46.7	49.9	48.5	.441	20.63	228	209

*1914-1921 establishments only. See pp. 3, 5.

Hours

In July, 1914, 54.3 hours constituted the average *nominal work week*. A general reduction in working hours took place during the war period, a drop being noted to approximately 48 hours in June, 1920. At the beginning of 1921 the nominal week was increased to approximately 48½ hours, and remained at this level through the first six months of the year.

The *average hours of plant operation* in July, 1914 were 54.1 In June, 1920 industrial depression had set in and there was a drop to 46 hours. During the fall, considerable decrease in plant activity was noted, followed by a most severe period of depression in November. Beginning in December and continuing in 1921, there was a marked revival in plant operation. The hours from December, 1920 up to July, 1921 have exceeded the hours of the nominal week. This was caused in part by the fact that many plants have operated on a two-

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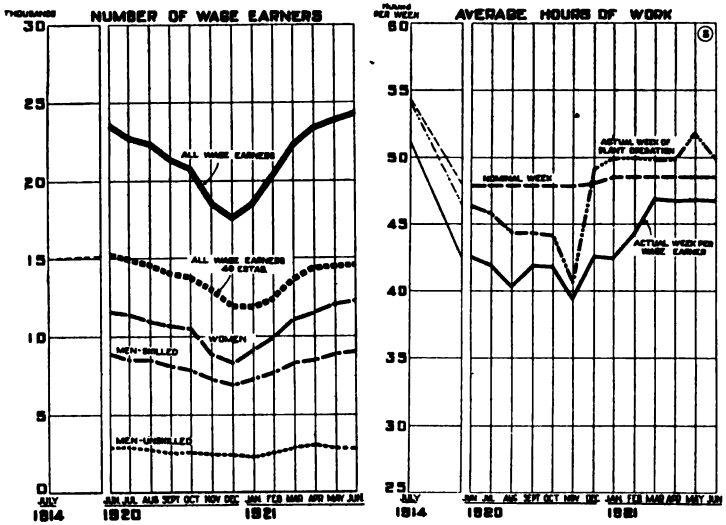

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shift basis in order to give employment to as many people as possible, although the wage earner has not generally worked on an overtime basis.

The *average actual week per wage earner* showed a decline from 51.1 hours in July, 1914 to 42.5 in June, 1920. A period of decline followed, the trough of 39.4 hours being reached in November. A marked increase occurred in 1921, following the trend in plant activity. The stimulation in this industry, during 1921, had a marked effect in maintaining weekly earnings, which otherwise would have been reduced considerably through the decline in hourly earnings.

Conclusion

1. The decline in hourly earnings has been extensive, but less than in other textiles, except hosiery manufacturing.
2. Reduction in weekly earnings has been slight, because longer working hours have been maintained during 1921.
3. The depression period in plant activity occurred at the close of 1920, followed by a marked revival during 1921.
4. An increase in employment of over 3% occurred between June, 1920 and July, 1921.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkl
1914																		
July*.....	*763*	*60.1*	*$.201*	*$12.07*	*100*	*100*	*6,269*	*51.1*	*$.243*	*$12.41*	*100*	*100*	*7,968*	*50.3*	*$.153*	*$ 7.69*	*100*	*100*
1920																		
June.....	2,938	48.3	.510	24.61	254	204	8,947	43.0	.628	27.01	258	218	11,629	40.7	.426	17.32	278	225
July.....	2,957	45.0	.512	23.08	255	191	8,566	42.3	.637	26.95	262	217	11,341	40.5	.423	17.14	276	223
Aug.....	2,849	45.8	.513	23.42	255	194	8,461	41.1	.633	25.98	260	209	10,956	38.2	.417	15.91	273	207
Sept.....	2,588	43.6	.523	22.82	260	189	8,057	43.1	.630	27.14	259	219	10,606	40.6	.418	16.87	273	219
Oct.....	2,637	44.4	.522	23.16	260	192	7,811	43.0	.629	27.04	259	218	10,353	40.0	.426	17.02	278	221
Nov.....	2,509	45.0	.518	23.28	258	193	7,242	40.2	.621	24.94	256	201	8,889	37.1	.424	15.76	277	205
Dec.....	2,475	44.6	.500	22.33	249	185	6,931	44.3	.606	26.81	249	216	8,334	40.6	.421	17.07	275	222
1921																		
Jan.....	2,303	45.5	.474	21.56	236	179	7,220	42.4	.572	24.28	235	196	9,128	41.5	.375	15.55	245	202
Feb.....	2,684	47.1	.466	21.96	232	182	7,714	44.2	.562	24.83	231	200	9,959	43.6	.369	16.09	241	209
Mar.....	2,991	46.1	.461	22.55	229	187	8,239	47.4	.548	26.02	226	210	11,066	45.8	.375	17.15	245	223
April.....	3,084	46.8	.455	21.27	226	176	8,576	47.4	.547	25.90	225	209	11,698	46.2	.375	17.33	245	225
May.....	2,948	48.4	.449	21.74	223	180	8,902	47.2	.541	25.51	223	206	12,064	46.1	.362	16.68	237	217
June.....	2,868	48.7	.448	21.80	223	181	9,040	47.1	.543	25.57	223	206	12,278	46.0	.363	16.71	237	217

*1914-1921 establishments only. See pp. 3, 5.

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IX

HOSIERY AND KNIT GOODS MANUFACTURING

The wage investigation in this industry includes establishments manufacturing hosiery, underwear, sweaters and other knitted wear. Separate classification was originally made of both hosiery and underwear plants, but the general differences between these two groups were reflected only in the earnings of common labor. The composite group, therefore, is used for the investigation. Returns were received from 90 plants employing 24,849 workers at the high point in June, 1920. The geographical distribution in this industry, within 18 states, is as follows:

Connecticut	5	North Carolina	5
Georgia	2	Ohio	4
Maryland	1	Pennsylvania	25
Massachusetts	4	South Carolina	1
Michigan	4	Rhode Island	1
Minnesota	2	Utah	1
New Hampshire	1	Washington	1
New Jersey	2	West Virginia	1
New York	25	Wisconsin	5

Wages

(a) *Hourly earnings*: Composite hourly earnings of *all wage earners* show an increase of 149% from July, 1914 to July, 1920, and from the latter period up to July, 1921, declined 11.4%, leaving a net increase of 121%. A stationary condition existed through 1920, with approximately a 10% cut occurring in January, 1921. The first six months of 1921 showed a practically unchanged situation. The high point of hourly earnings for the male labor group was reached in December, 1920, when the hourly earnings of *common labor* were 201% above 1914 and those of *skilled labor* 156%. The peak of hourly earnings for *women* occurred in June, 1920, when they were 150% above 1914. The percentages of decrease from each of these peaks to the middle of 1921 were as follows: *common labor*, 18.9%; *skilled labor*, 15%; *women*, 11.8%.

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Up to July, 1921, the percentages of increase above 1914 for the three groups were: *common labor*, 144%; *skilled labor*, 118%; *women*, 120%.

(b) *Weekly earnings*: Composite weekly earnings of *all wage earners* increased 135% from July, 1914 to June, 1920 and from the latter period up to July, 1921, declined 15.2%, leaving a net increase of 99%. The weekly earnings remained practically stationary through October, 1920. In November, 1920, there was a considerable reduction due to shorter working hours, and the opening months of 1921 showed continued depression. However, there was a marked revival during the spring of 1921.

The high point of weekly earnings for *common labor* was reached in December, 1920, when they stood 160% over 1914; for *skilled labor*, in August, 1920, when there was an increase of 132%, and in June, 1920 for *women*, when there was an increase of 134% over 1914. The percentages of decline from these respective peaks up to July, 1921 were as follows: *common labor*, 20.2%; *skilled labor*, 17.5%; *women*, 13.2%. The percentages of increase over 1914 up to July, 1921, were respectively 107%, 91% and 103%.

In general, the decline in hourly earnings has been far below that in other textiles. The decrease in weekly earnings is due to the reduction in hourly rates and loss in working hours during 1920-1921. Relatively speaking, the net wage increases in June, 1921 have been less in this group than in other textiles, except southern cotton mills.

Employment

The total number of wage earners decreased 13.6% from June, 1920 up to July, 1921. The trough period was reached in January, 1921, when they had decreased 37.7%. Between January and July, 1921, there was a continuous revival so that 38.7% more wage earners were employed at the latter period than at the beginning of the year. The greatest reduction in any of the groups between June, 1920 and the middle of 1921 occurred in common labor.

The total number of wage earners in identical establishments increased approximately 20% between July, 1914 and June, 1920. In June, 1921, employment in identical establishments had fallen below the 1914 level. In general, employ-

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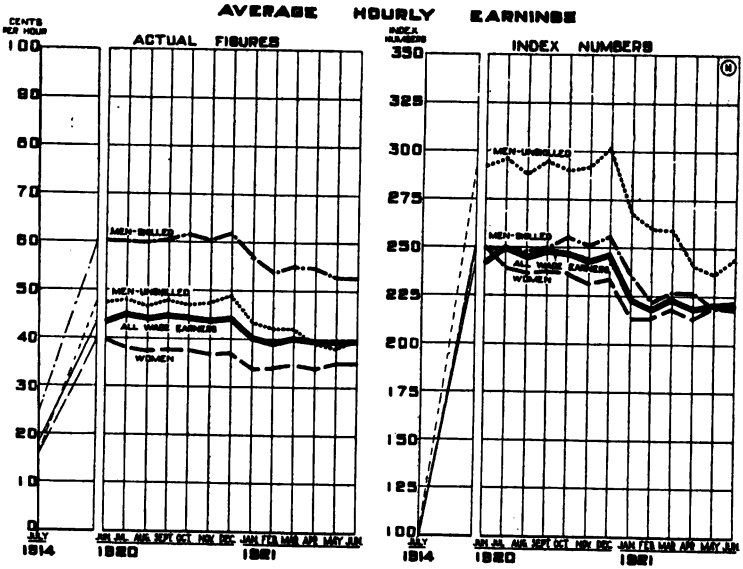

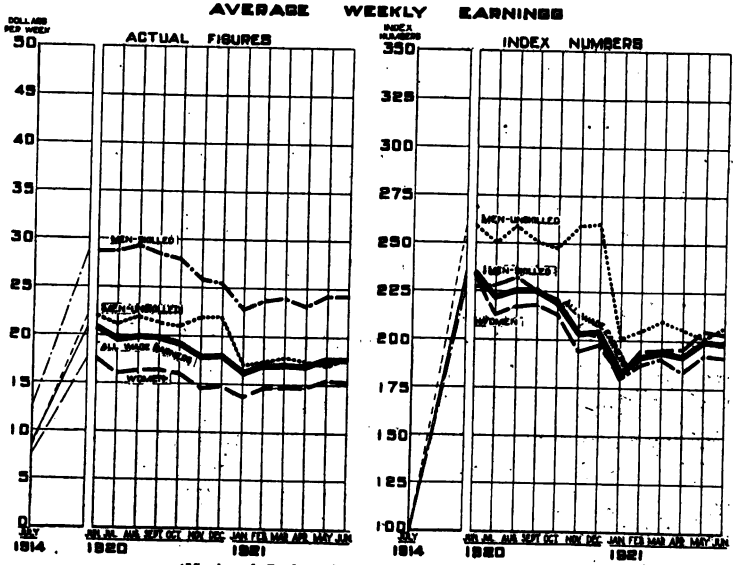

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hrs. Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*....	*16,034*	*16,034*	*48.9*	*54.5*	*54.2*	*$.180*	*$ 8.82*	*100*	*100*
1920									
June.....	19,239	24,849	47.8	49.5	50.2	.433	20.72	241	235
July.....	18,291	24,090	43.7	46.4	50.2	.449	19.61	249	222
Aug.....	16,533	22,214	45.0	49.9	50.2	.441	19.88	245	225
Sept.....	17,264	22,823	44.5	49.2	50.2	.446	19.84	248	225
Oct.....	13,386	18,936	43.4	46.3	50.2	.444	19.28	247	219
Nov.....	13,664	18,842	40.9	44.7	50.2	.438	17.92	243	203
Dec.....	11,060	15,818	40.6	44.2	50.2	.443	17.98	246	204
1921									
Jan.....	10,521	15,471	40.2	44.7	50.2	.401	16.11	223	183
Feb.....	12,456	17,917	43.1	48.2	50.3	.392	16.91	218	192
Mar.....	13,342	19,080	42.5	47.5	50.3	.401	17.07	223	194
April....	14,720	20,729	43.1	47.4	50.3	.393	16.93	218	192
May.....	14,834	21,034	44.6	49.3	50.3	.396	17.68	220	200
June.....	14,984	21,459	44.2	49.3	50.3	.398	17.58	221	199

*1914-1921 establishments only. See pp. 3, 5.

ment conditions point to a decrease in employment to slightly below the general level found in other textile industries, except northern cotton mills.

Hours

The hours of the average *nominal week* in July, 1914 amounted to 54.2. Following the general reduction in the length of working hours during the war period, there was a drop to 50.2 hours in June, 1920, which standard remained practically stationary throughout 1920 and the first six months of 1921.

The *actual week of plant operation* decreased from 54.5 hours in July, 1914 to 49.5 hours in June, 1920. The industrial depression began to take effect in October, 1920, when there was a drop to 46.3 hours. The next three months showed continued depression. Beginning in February, 1921 there was a marked revival which was sustained through June.

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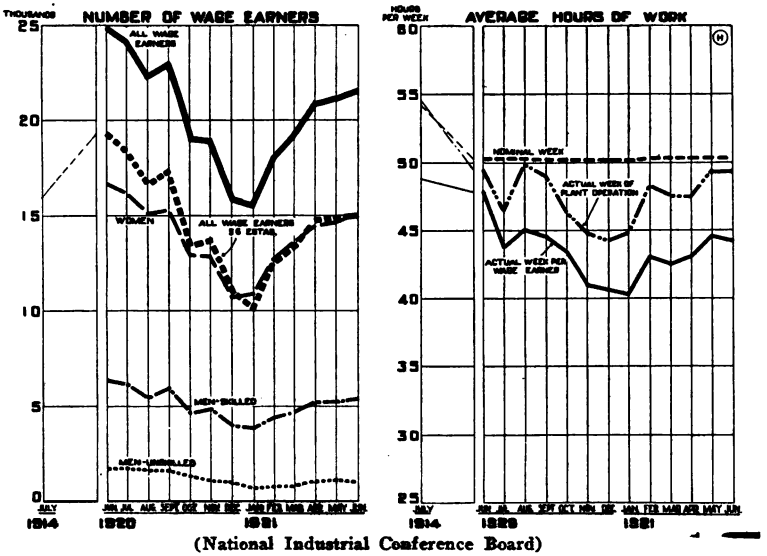

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The *actual week per wage earner* declined from 48.9 hours in July, 1914 to 47.8 hours in June, 1920. There was a marked decline during the summer months of 1920, apparently due to fluctuations in the amount of piece-work production. Depression commenced in November, 1920, when hours fell to 40.9. Stagnation continued through January, 1921. In February, 1921 there was a marked revival of almost three hours, which was practically sustained through April, when there was further increase in working hours. In general, the trend of working hours has followed that of other textiles, showing a depression in the winter of 1920-1921 with marked stimulation and revival during the spring months of 1921.

Conclusion

1. Decline in hourly earnings from July, 1920 up to July, 1921, has been less than that found in other textiles.

2. The decrease in weekly earnings was practically on a level with that found in most basic industries, but much less than in cotton manufacturing.

3. The drop in employment has been less than in the majority of basic industries. The depression period in hours and employment was reached in the winter of 1920-1921, and the spring of 1921 witnessed a marked revival in activity.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly
1914																		
July*.....	*1,167*	*52.2*	*$.162*	*$ 8.48*	*100*	*100*	*3,881*	*52.5*	*$.241*	*$12.62*	*100*	*100*	*10,986*	*47.2*	*$.159*	*$7.51*	*100*	*100*
1920																		
June.....	1,759	46.4	.473	21.93	292	259	6,385	47.7	.601	28.66	249	227	16,705	44.3	.397	17.55	250	234
July.....	1,766	44.3	.479	21.19	296	250	6,132	47.9	.600	28.73	249	228	16,192	42.0	.380	15.99	239	213
Aug.....	1,675	47.0	.467	21.93	288	259	5,405	49.0	.598	29.29	248	232	15,116	43.5	.375	16.31	236	217
Sept.....	1,651	44.6	.478	21.32	295	251	5,915	47.2	.603	28.45	250	225	15,257	43.4	.377	16.34	237	218
Oct.....	1,387	44.8	.469	21.02	290	248	4,644	45.4	.615	27.92	255	221	12,905	42.6	.376	15.98	236	213
Nov.....	1,125	46.4	.473	21.98	292	259	4,858	42.7	.604	25.79	251	204	12,859	39.7	.368	14.59	231	194
Dec.....	1,084	45.2	.488	22.04	301	260	4,009	41.2	.618	25.43	256	202	10,725	40.0	.370	14.79	233	197
1921																		
Jan.....	731	39.3	.434	17.04	268	201	3,889	40.0	.569	22.74	236	180	10,851	40.4	.339	13.67	213	182
Feb.....	852	41.4	.421	17.42	260	205	4,406	44.1	.536	23.63	222	187	12,659	42.9	.339	14.54	213	194
Mar.....	875	42.3	.420	17.78	259	210	4,687	43.8	.548	23.96	227	190	13,518	42.1	.347	14.64	218	195
April.....	1,105	44.7	.391	17.46	241	206	5,218	42.3	.546	23.12	227	183	14,406	43 3	.338	14.65	213	195
May.....	1,182	44.5	.382	17.01	236	201	5,238	45.9	.527	24.18	219	192	14,614	44.1	.349	15.40	219	205
June.....	1,104	44.5	.396	17.59	244	207	5,352	46.0	.525	24.16	218	191	15,003	43.5	.350	15.23	220	203

*1914-1921 establishments only. See pp. 3, 5.

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RUBBER MANUFACTURING

The wage investigation in this industry covers establishments engaged in the manufacture of rubber tires, rubber footwear, mechanical rubber goods, rubberized fabrics and sundries. Returns were received from 87 plants employing 75,679 wage earners in June, 1920. Women were employed in 70 plants. Over 40% of the wage earners listed in the 1919 Census of Manufactures in this industry were covered in this investigation. The majority of the plants were in the largest centers of rubber manufacturing. The geographical distribution within 17 states is as follows:

California	1	Missouri	1
Connecticut	9	New Jersey	9
Delaware	1	New York	10
Illinois	2	Ohio	18
Indiana	1	Oregon	2
Iowa	1	Pennsylvania	6
Maryland	1	Rhode Island	5
Massachusetts	16	Wisconsin	3
Michigan	1		

Wages

(a) *Hourly earnings*: Composite hourly earnings of *all wage earners* had increased 172% in June, 1920 in comparison with July, 1914. The decline from the latter period up to July, 1921 was 13.1%. The greatest amount of decrease occurred in February, when composite earnings were 14.9% less than in the preceding June. The increase between the latter period and July, 1921 was approximately 2%. In June, 1920 the hourly earnings of *common labor* were 170% above 1914, and in the same month those of *skilled labor* showed an increase of 171%. The peak of hourly earnings for *women* was reached in September, when the increase reached 142%. The declines from these various peaks up to July, 1921 for the three groups were as follows: *common labor*, 14.7%; *skilled labor*, 14.8%; *women*, 14.1%.

(b) *Weekly earnings:* Composite weekly earnings of *all*

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wage earners showed an increase of 140% from July, 1914 to June, 1920 and declined 10.1% from the latter period up to July, 1921. The trough was reached in February, when they had dropped over 24% from the peak. The increase in weekly earnings from February up to July, 1921, amounted to 18.4%. As there was practically no rise in hourly earnings during this period, the increase in weekly earnings was due to longer working hours.

The high point of weekly earnings of *common labor* was reached in July, 1920, when they had increased 142% over 1914. In June, 1920 those of *skilled labor* showed an increase of 139% and in July, *women* were receiving 118% more than in 1914. The declines of these various groups from their respective peaks up to July, 1921 were as follows: *common labor*, 16.1%; *skilled labor*, 10.3%; *women*, 17.5%. In June, 1921 these three groups respectively showed percentage increases over 1914 for weekly earnings as follows: 103%, 114% and 80%.

The trend of earnings has been dominated by industrial conditions in the automobile industry. The majority of wage schedules in this investigation are from rubber tire manufacturers whose productive activity is dependent upon conditions in the automobile industry.

Employment

The decline in total number of wage earners employed from June, 1920 up to July, 1921 was 54%. The trough was reached in February, 1921 when there was a decline of 60% from June, 1920, followed by an increase to May, of 34%. Between May and June employment again showed a marked decrease of 14%. The employment trend also is influenced by conditions in the automobile industry. The declines from June, 1920 up to July, 1921 for the three groups were as follows: common labor, 47.7%; skilled labor, 53%; women, 62.8%. The declines to the trough in February for the groups were: common labor, 58%; skilled labor, 64%. The recovery from the depression period to May for common labor was 33.6%, for skilled labor, 43.8%, and for women, 9.7%. The declines between May and June for the three groups were: common labor, 6%; skilled labor, 8%; women, 39%. The marked decline in the latter group was due to ex-

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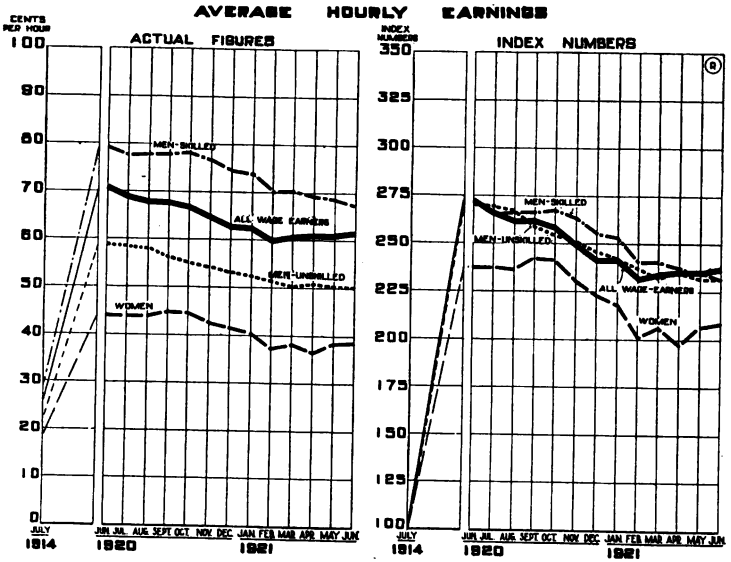

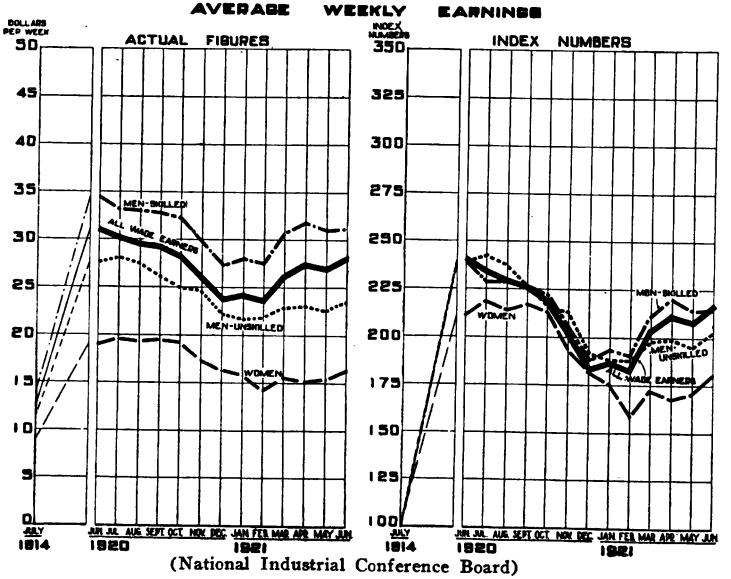

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hrs. Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*....	*23,895*	*23,895*	*49.8*	*52.5*	*54.1*	*$.259*	*$12.90*	*100*	*100*
1920									
June.....	57,882	75,679	44.0	44.5	50.4	.704	30.97	272	240
July.....	54,122	67,803	43.7	44.2	50.4	.686	30.01	265	233
Aug.....	45,351	55,182	43.4	44.4	50.4	.677	29.40	261	228
Sept.....	40,887	49,206	43.0	44.1	50.3	.675	29.03	261	225
Oct.....	35,937	43,709	42.1	43.9	50.3	.667	28.09	258	218
Nov.....	30,723	37,794	40.0	41.4	50.2	.646	25.87	249	201
Dec.....	28,040	33,961	37.9	39.6	50.2	.624	23.64	241	183
1921									
Jan.....	26,288	32,105	38.5	40.8	50.3	.623	23.96	241	186
Feb.....	23,522	30,161	39.2	40.9	50.4	.599	23.50	231	182
Mar.....	25,019	32,604	43.0	44.6	50.4	.603	25.97	233	201
April....	26,944	36,929	44.8	45.8	50.5	.606	27.15	234	210
May.....	28,996	40,501	44.0	46.3	50.5	.607	26.73	234	207
June.....	23,638	34,774	45.5	46.4	50.5	.612	27.83	236	216

*1914-1921 establishments only. See pp. 3, 5.

tensive lay-offs among female wage earners engaged in manufacture of rubber footwear.

Total employment increased 142% in identical establishments in the rubber industry between July, 1914 and June, 1920.

Hours

The average hours of the *nominal week* in July, 1914 were 54.1. Following the general reduction in length of working hours during the war period, the hours dropped to 50.4 in June, 1920, the latter standard being maintained practically throughout 1920-1921.

The *actual week of plant operation* shows a reduction from 52.5 hours in July, 1914 to 44.5 hours in June, 1920. There was a marked decline between July and December of almost five hours in plant activity. The beginning of 1921 was marked

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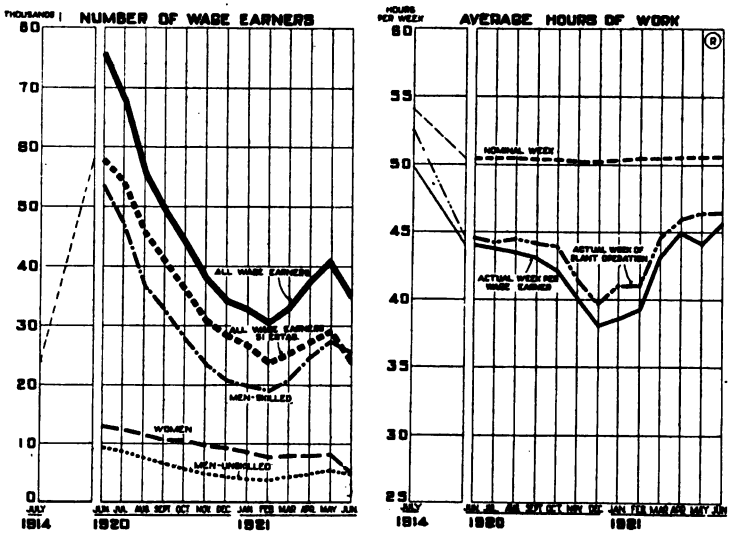

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by a revival which continued throughout the first six months.

The *actual week per wage earner* showed a decline from 49.8 hours in July, 1914 to 44 hours in June, 1920. The slump in productive activity, however, began to take effect at the end of September and the trough of 37.9 hours per week was reached in December. The beginning of the year, however, showed a marked revival and in June, 1921 the average week per wage earner exceeded that of the preceding year.

Conclusion

1. Declines in hourly earnings were slightly less than reductions in the majority of basic industries.
2. Declines in weekly earnings were considerably less, due to the revival in the spring months of 1921.
3. A total decline in employment of 54% took place during the last year, this being practically the same loss found in the automobile industry.
4. The average hours of work show a decline during the close of 1920 and a marked revival during 1921.
5. The rubber industry evidently has passed through the worst period of readjustment, although a marked slump was noted in June, 1921.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*	*3,738*	*53.1*	*$.217*	*$11.54*	*100*	*100*	*15,384*	*49.4*	*$.292*	*$14.44*	*100*	*100*	*4,777*	*48.6*	*$.185*	*$ 8.98*	*100*	*100*
1920																		
June	9,237	46.9	.587	27.53	270	239	53,475	43.7	.790	34.48	271	239	12,967	43.1	.439	18.94	237	211
July	8,647	47.9	.584	27.94	269	242	46,904	42.8	.775	33.12	265	229	12,252	44.6	.438	19.55	237	218
Aug	7,227	47.2	.580	27.35	267	237	36,586	42.5	.776	32.96	266	228	11,369	44.0	.437	19.24	236	214
Sept	6,350	46.2	.563	26.02	259	226	32,206	42.2	.777	32.78	266	227	10,650	43.6	.447	19.49	242	217
Oct	5,682	45.2	.551	24.91	254	216	27,610	41.1	.780	32.12	267	222	10,417	43.0	.446	19.16	241	213
Nov	4,723	45.2	.544	24.58	251	213	23,350	38.7	.767	29.67	263	205	9,721	40.8	.425	17.36	230	193
Dec	4,099	41.6	.534	22.17	246	192	20,762	36.5	.744	27.15	255	188	9,100	39.5	.413	16.30	223	182
1921																		
Jan	3,969	41.3	.525	21.67	242	188	19,875	37.8	.738	27.86	253	193	8,261	38.8	.404	15.67	218	175
Feb	3,857	42.3	.514	21.73	237	188	19,048	39.1	.702	27.42	240	190	7,256	38.0	.372	14.16	201	158
Mar	4,262	45.3	.503	22.82	232	198	20,699	43.5	.702	30.50	240	211	7,643	40.5	.381	15.43	206	172
April	4,818	45.3	.507	22.99	234	199	24,533	45.8	.692	31.72	237	220	7,578	41.2	.364	15.02	197	167
May	5,152	44.9	.502	22.51	231	195	27,390	45.1	.685	30.85	235	214	7,959	39.9	.382	15.24	206	170
June	4,829	46.8	.501	23.45	231	203	25,117	46.0	.673	30.93	231	214	4,824	41.9	.384	16.13	208	180

*1914-1921 establishments only. See pp. 3, 5.

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XI

LEATHER TANNING AND FINISHING

The wage investigation is confined to establishments engaged in the tanning and finishing of leather hides, and does not include the manufactures of leather. Schedules were received from 75 plants, employing 11,514 wage earners in June, 1920. Twenty-four establishments employed women. Fifteen per cent of all wage earners listed in the leather tanning industry in the 1919 Census of Manufactures are included in these data. The geographical distribution, within 23 states, is as follows:

California	7	New Jersey	4
Connecticut	2	New York	7
Delaware	1	North Carolina	2
Illinois	3	Ohio	5
Iowa	1	Oregon	1
Maine	3	Pennsylvania	6
Maryland	1	Tennessee	1
Massachusetts	16	Virginia	1
Michigan	2	Washington	1
Minnesota	1	West Virginia	1
Missouri	1	Wisconsin	7
New Hampshire	1		

There are peculiar difficulties connected with any compilation of wage data in the leather tanning industry. The great proportion of work in tanneries is chiefly of "muscle" labor requiring more or less skill. Therefore, the dividing line of occupational classification between common and skilled labor is difficult to define. In the second place, the proportion of women is small, and the data for this group, therefore, are relatively unimportant. Finally, in many plants, men are employed, in the course of one day, on both day and piece work. This combination of piece rates and per diem earnings makes average hourly earnings data of minor significance.

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 164% from July, 1914 to June, 1920.

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The decline from the latter period up to July, 1921 was 17.8%. In June, 1921, the increase was still 117% over July, 1914. The peak of hourly earnings was reached in the spring and summer of 1920. Slight reductions took place in the closing months of 1920. A large decrease occurred in January, followed again by a gradual decline to the lowest point of deflation in June, 1921. In June, 1920, the hourly earnings of *common labor* had increased 156% over July, 1914; those of *skilled labor*, 167%; and those of *women*, 200%. The declines from June, 1920 up to July, 1921 amounted to 16.5% for *common labor*, 18.4% for *skilled labor*, and 27.5% for *women*. In June, 1921, the percentages of increase over July, 1914 for the three groups respectively were 114%, 118% and 118%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 145% from July, 1914 to July, 1920, and declined from the latter period up to July, 1921, 18.6%, showing a net increase in the middle of June, 1921 of 99% over July, 1914. February, 1921 was a period of depression, a decline of 20.6% being noted from the peak. The period from February up to July, 1921 marked an increase in weekly earnings. While hourly earnings declined during this period, the rise in weekly earnings is the result of an increase of over four hours in the average hours worked per wage earner.

The high point in weekly earnings for *common labor* was reached in July, 1920, when they stood 139% over 1914; in June for *skilled labor*, when they had increased 152%; and also in June for women, when they were 178% higher than 1914. In June, 1921, the decline from the high point was 19.5% for *common labor*, 18.9% for *skilled labor*, 24.9% for *women*. The percentage increases up to July, 1921 over July, 1914 for these three groups were respectively 92%, 104%, 109%.

Employment

The total decline in employment from June, 1920 up to July, 1921 was 23.6%. The greatest period of unemployment was in February, 1921, when a decline of 36% from the high point was reached. This period of stagnation was followed by a gradual increase of 19% up to July, 1921. The declines from June, 1920 up to July, 1921 were as follows: common labor, 22%; skilled labor, 23%; women, 39%.

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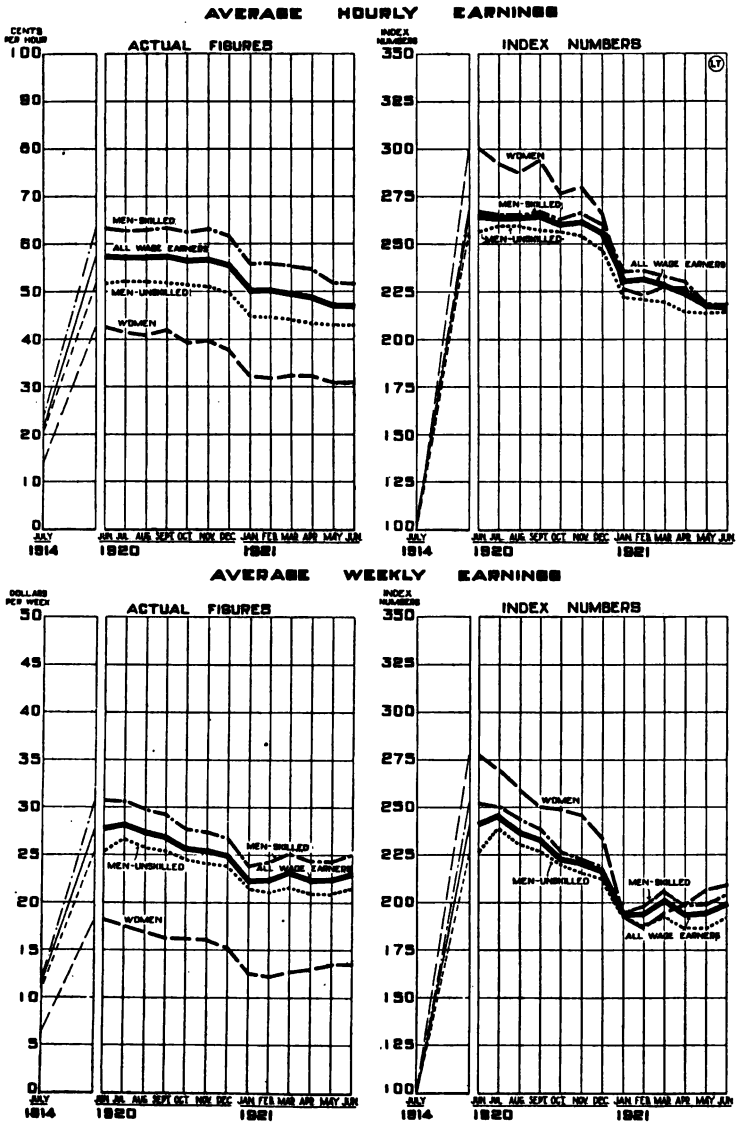

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*....	*8,388*	*8,388*	*53.1*	*57.2*	*58.0*	*$.217*	*$11.50*	*100*	*100*
1920									
June.....	9,997	11,514	48.4	50.0	51.1	.572	27.70	264	241
July.....	9,262	10,729	49.4	51.4	51.1	.570	28.14	263	245
Aug.....	8,840	10,277	47.9	50.6	51.1	.570	27.28	263	237
Sept.....	8,248	9,619	46.9	50.7	51.2	.572	26.80	264	233
Oct.....	7,628	8,989	45.6	49.2	51.2	.564	25.66	260	223
Nov.....	7,151	8,409	44.8	49.4	51.2	.566	25.36	261	221
Dec.....	6,886	8,056	45.0	49.1	51.2	.553	24.91	255	217
1921									
Jan.....	6,697	7,769	44.6	48.1	51.5	.500	22.28	230	194
Feb.....	6,368	7,422	44.6	47.3	51.5	.501	22.33	231	194
Mar.....	6,458	7,627	46.6	49.6	51.5	.495	23.09	228	201
April....	6,854	8,251	45.8	47.9	51.5	.487	22.36	224	194
May.....	7,062	8,470	47.5	49.8	51.5	.472	22.41	217	195
June.....	7,432	8,800	48.8	50.1	51.5	.470	22.91	217	199

*1914-1921 establishments only. See pp. 3, 5.

Employment increased 19% between July, 1914 and June, 1920. In June, 1921, 11% less wage earners were employed in identical establishments than in July, 1914.

Hours

In July, 1914, 58 hours constituted the average *nominal week*. Following the general reduction of working hours during the war period, there was a drop to 51.1 hours in June, 1920. This standard of hours remained practically stationary to the close of the year. In January, 1921 they increased to 51.5 hours per week, and continued so up to July, 1921.

The *average actual hours of plant operation* were reduced from 57.2 in July, 1914 to 50 in June, 1920. The period of greatest inactivity in the leather industry was between October and March, when the hours of plant operation averaged approxi-

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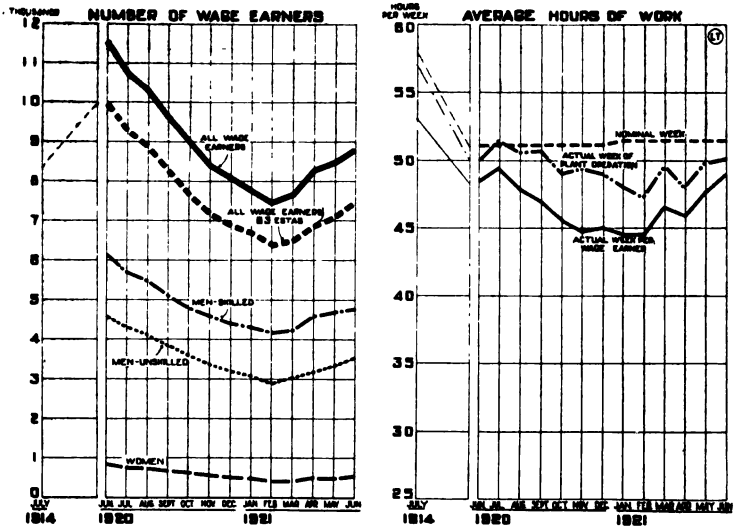

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mately 49 per week. The spring months of 1921 showed a marked revival, rising in June to 50.1 hours per week.

The *average actual hours per wage earner* showed a decline from 53.1 in July, 1914 to 48.4 in June, 1920. A somewhat irregular decline continued through February, when there was a drop to 44.6 hours per week. In June, 1921, wage earners were working longer hours than in June, 1920, pointing to a marked revival in industrial activity.

Conclusion

1. The trough period occurred in February, 1921, followed in the spring by a gradual approach to more normal conditions of employment, earnings and production.
2. The total decline in employment was 24% from the peak up to July, 1921.
3. The decline in the total number of wage earners from July, 1914 up to July, 1921 was 11%.
4. There was a decline in the average hours of the nominal week from 58 in July, 1914 to approximately 51.5 hours in 1920-1921.
5. There was less part-time operation, during the depression period than in many other basic industries.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos.	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly
1914																		
July*	*3,638*	*55.7*	*$.201*	*$11.19*	*100*	*100*	*4,338*	*51.6*	*$.237*	*$12.23*	*100*	*100*	*412*	*45.8*	*$.142*	*$ 6.50*	*100*	*100*
1920																		
June	4,552	49.2	.515	25.33	256	226	6,125	48.7	.632	30.78	267	252	837	42.4	.426	18.07	300	278
July	4,288	51.3	.521	26.73	259	239	5,682	48.9	.627	30.63	265	250	759	42.2	.415	17.54	292	270
Aug	4,087	49.5	.520	25.74	259	232	5,464	47.5	.628	29.84	265	244	726	41.4	.408	16.92	287	260
Sept	3,845	49.2	.517	25.45	257	227	5,088	46.2	.633	29.23	267	239	686	38.9	.418	16.27	294	250
Oct	3,587	47.9	.514	24.58	256	220	4,796	44.4	.624	27.70	263	227	606	41.1	.393	16.17	277	249
Nov	3,330	47.4	.510	24.18	254	216	4,542	43.4	.630	27.33	266	223	537	40.3	.397	16.01	280	246
Dec	3,188	48.0	.497	23.84	247	213	4,373	43.4	.617	26.79	260	219	495	40.4	.378	15.24	266	234
1921																		
Jan	3,040	48.2	.447	21.55	222	193	4,280	42.6	.559	23.83	236	195	449	39.2	.321	12.58	226	193
Feb	2,891	47.3	.445	21.03	221	188	4,134	43.4	.559	24.22	236	198	397	38.4	.316	12.14	223	187
Mar	3,028	48.9	.441	21.57	219	193	4,203	45.6	.552	25.16	233	206	396	39.3	.322	12.62	227	194
April	3,198	48.5	.432	20.94	214	187	4,573	44.6	.546	24.34	230	199	480	40.3	.321	12.93	226	199
May	3,318	48.7	.429	20.92	213	187	4,695	47.0	.518	24.34	219	199	457	43.6	.308	13.42	217	206
June	3,550	50.0	.430	21.51	214	192	4,742	48.4	.516	24.95	218	204	508	43.9	.309	13.57	218	209

*1914-1921 establishments only. See pp. 3, 5.

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XII

BOOT AND SHOE MANUFACTURING

The study of the boot and shoe industry includes establishments manufacturing only leather footwear. The returns covering the manufacture of rubber footwear are included in the tabulations for the rubber industry. Schedules were received from 111 establishments, 110 of which employed women. The total number of wage earners at the high point of employment in June, 1920 was 57,451. Approximately 23% of the wage earners listed in the 1919 Census of Manufactures as being employed in this industry are covered in this report. The average sized plant in this investigation employed 518 wage earners. The data covering this industry are very representative in the coverage of wage earners involved, and in the distribution and size of establishments studied. The geographical distribution within 12 states is as follows:

Illinois	9	New Jersey	3
Maine	3	New York	13
Massachusetts	35	Ohio	9
Michigan	1	Pennsylvania	8
Missouri	10	West Virginia	1
New Hampshire	14	Wisconsin	5

The plants centered chiefly in the following cities: Binghamton, N. Y.; Boston and environs; Chicago; Cincinnati; Manchester, N. H.; Philadelphia; and St. Louis.

The compilation of wage data in the boot and shoe industry, with reference to hours, is exceedingly difficult. The record of hours worked and hourly earnings is kept by very few establishments. The system of piece and day rates and task and bonus methods makes any compilation of accurate hourly data practically impossible. In this investigation, out of 111 plants, only 25 submitted sufficient data covering the actual hours of wage earners. In the statistical tables, therefore, the average hours per wage earner and the hourly earnings, both for the composite and individual groups, have been con-

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fined to the records of 25 establishments only, which furnished accurate information. The rest of the data covering numbers employed, weekly earnings, etc., is from the whole group of 111 establishments.

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* in 25 establishments show an increase of 112% from July, 1914 to October, 1920. The decline from the latter period up to July, 1921 was 7.6%, the increase in June, 1921 being 96% over July, 1914. The whole trend of hourly earnings is, of course, dominated by the relation of piecework to the amount of work produced by wage earners. In actual figures, the rate for the whole group dropped 2.3 cents from June, 1920 up to July, 1921. In July, 1920, hourly earnings of *common labor* were 143% above 1914; in June, 1920 those of *skilled labor* were 110% above 1914, while the high point for hourly earnings for *women* was reached in October, with a peak of 132%. In June, 1921, the three groups showed increases over 1914 of 95%, 97% and 104% respectively.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* in 111 establishments increased 109% from July, 1914 to June, 1920 and declined 5.2% from the latter period up to July, 1921. The trough of decline was reached in November, 1920, when there was a reduction of 12.4% from the peak in June, 1920. The peak for male labor was reached in June, 1920, when weekly earnings of *common labor* were 99%, and those of *skilled labor* 109% above 1914, and for *women* in March, 1921 when weekly earnings were 115% above 1914. The declines from these peaks up to July, 1921 were 5.9% for *common labor*, 3.9% for *skilled labor*, and 8.3% for *women*. The male groups show a decline to November, 1920, a revival in December, and continuing fluctuations until the middle of 1921. Weekly earnings for women show a similar movement, with a peak in March, 1921. In June, 1921, the percentage increases over 1914 for these three groups were respectively 87%, 101% and 97%.

The trend of weekly earnings is evidently not affected by changes in hourly earnings, but by the actual hours per wage earner. It is evident that wage decline in the boot and shoe industry has been slight and gradual. Hourly earnings have

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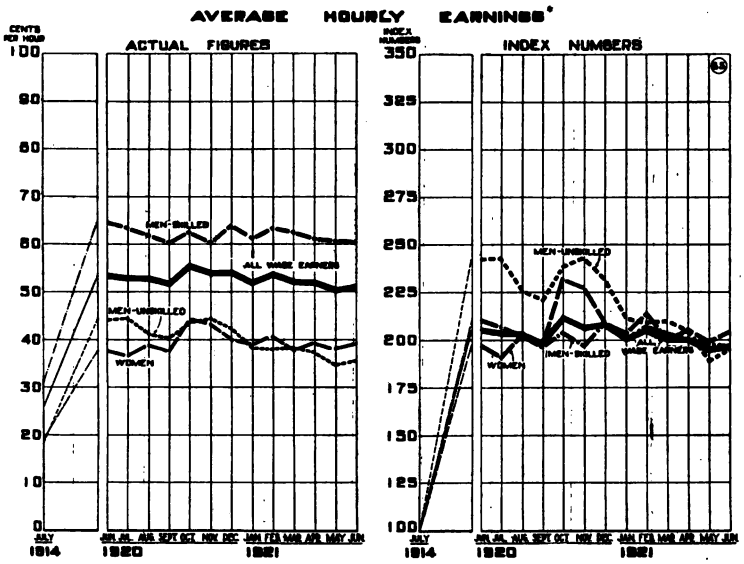

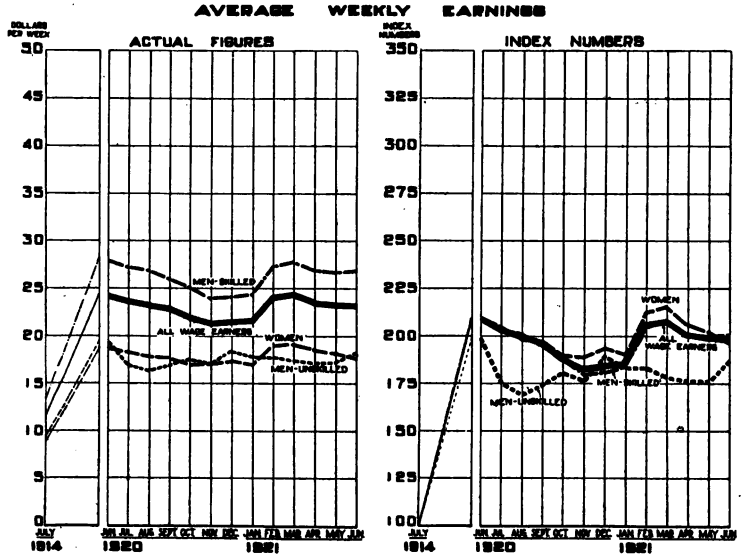

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs. †	Av. Wkly. Earngs.	Hrly. †	Wkly.
1914									
July*....	*41,678*	*41,678*	*49.2*	*54.6*	*54.4*	*$.260*	*$11.68*	*100*	*100*
1920									
June.....	47,076	57,451	44.8	48.3	48.6	.533	24.36	205	209
July.....	42,893	51,283	42.1	49.4	48.6	.528	23.77	203	204
Aug.....	41,026	50,024	40.4	46.3	48.6	.528	23.33	203	200
Sept.....	37,709	46,307	38.7	46.6	48.6	.517	22.83	199	196
Oct.....	35,955	44,121	39.6	45.6	48.6	.552	21.95	212	188
Nov.....	33,848	41,536	37.0	43.4	48.6	.538	21.33	207	183
Dec.....	34,122	41,022	39.9	41.8	48.6	.540	21.54	208	184
1921...									
Jan.....	31,275	37,777	41.8	42.4	48.6	.519	21.63	200	185
Feb.....	35,811	44,021	41.9	45.9	48.6	.536	24.06	206	206
Mar.....	37,066	45,922	45.3	45.8	48.6	.519	24.32	200	208
April....	37,441	46,809	44.3	47.0	48.6	.519	23.53	200	201
May.....	39,247	49,260	45.9	48.2	48.6	.504	23.23	194	199
June.....	40,910	51,066	46.0	48.3	48.6	.510	23.18	196	198

†25 establishments only.
*1914-1921 establishments only. See pp. 3, 5.

been dominated by the number of hours worked. Hours, in turn, are influenced by the amount of production necessary, the basis of the industry being chiefly piecework for the production of finished stock. A decrease in the number of orders naturally makes the amount of production necessarily smaller. This, in turn, influences the number of hours to be worked and again the amount of wages earned. It is fair to say, however, that reduction may have occurred previous to June, 1920, the first month of record after July, 1914 in the present investigation. If wages were higher previous to the middle of 1920, the amount of deflation would naturally be greater. The record as given in this investigation, however, shows a gradual slight decrease, much smaller than in other basic industries. A comparison should be made with the wages in the leather industry, which are, of course, affected by conditions in boot and shoe manufacturing.

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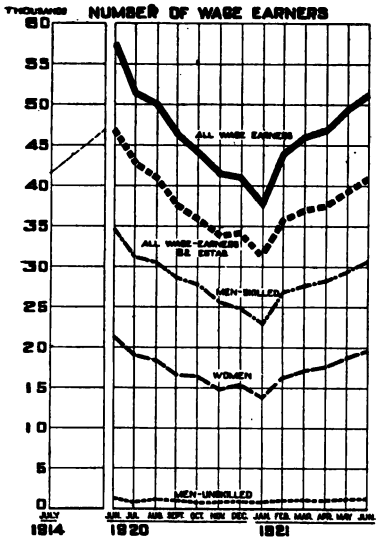

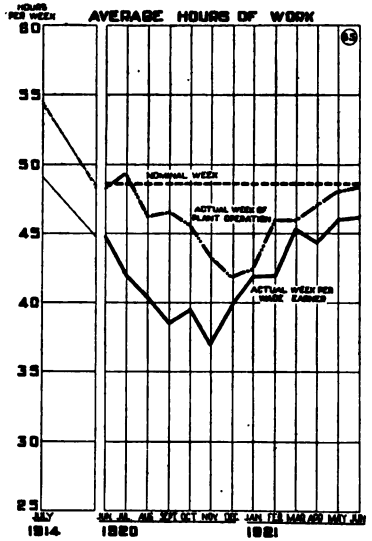

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Employment

The decline in the total number of wage earners employed from June, 1920 up to July, 1921 was 11.1%. The trough was reached in January, 1921 when there was a decline of 34% from the peak. The increase from the beginning of the year up to July, 1921 was 35%. The trend evidently reflects the sharp decline at the beginning of the year with marked recovery to June, the loss in the entire year 1920-1921 being considerably smaller than in the great majority of basic industries. The greatest loss was among skilled wage earners, there having been a decline of approximately 12% from June, 1920.

Comparison of employment in identical establishments between July, 1914 and July, 1921 shows that employment at the latter period was approximately 2% less than in July, 1914. The industry, therefore, has practically held its own during the present industrial depression. The expansion between July, 1914 and June, 1920 was a natural and normal growth, practically equal to the general expansion of industry during this period. On the whole, it would seem that the unemployment problem is not so severe in the boot and shoe industry as in the great majority of basic industries.

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Hours

The average hours of the *nominal week* in July, 1914 were 54.4. A general reduction of working hours took place during the war period, a drop being noted to 48.6 hours per week in June, 1920, the latter standard being maintained to the middle of 1921.

The *average week of plant operation* closely followed the trend in the reduction of hours in the nominal week, dropping from 54.6 in July, 1914 to 48.3 in June, 1920. A gradual decline occurred in plant activity, with a marked decrease in the last months of 1920, a minimum of 41.8 hours being reached in December. Recovery was marked during the early months of 1921, a gain of over six hours from the depression period being noted in June, 1921.

The *average week per wage earner* as compiled from 25 establishments follows the general trend in plant activity. The depression period, however, was reached in November, 1920 when the average wage earner worked only 37 hours per week. A gain of nine hours was noted from the latter period up to July, 1921, showing the extent of recovery in the boot and shoe industry. Too much weight, however, should not be placed upon the comparison of the average week per wage earner and plant activity. As noted above, an analysis of hours is distinctly misleading. On the whole, however, the trend in the movement of hours points to a marked recovery in the industry in the spring months of 1921.

Conclusion

1. Decrease in weekly earnings has been slight in comparison with most basic industries. Hourly earnings have generally been maintained and weekly earnings were affected only during the depression period in the winter of 1920–1921, due to part-time operation.

2. The wage situation has been influenced more by the rate of production than by wage cutting.

3. The decline of 11% in total employment from June, 1920 up to July, 1921, indicates a considerably smaller reduction than in the great majority of basic industries.

4. The number of people employed remained practically constant between July, 1914 and July, 1921.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs. †	Av. Hrly. Earngs. †	Av. Wkly. Earngs.	Index Nos. Earnings Hrly. †	Index Nos. Earnings Wkly.	No. Wage Earners	Av. Actual Hrs. †	Av. Hrly. Earngs. †	Av. Wkly. Earngs.	Index Nos. Earnings Hrly. †	Index Nos. Earnings Wkly.	No. Wage Earners	Av. Actual Hrs. †	Av. Hrly. Earngs. †	Av. Wkly. Earngs.	Index Nos. Earnings Hrly. †	Index Nos. Earnings Wkly.
1914																		
July*.....	*900*	*52.2*	*$.182*	*$ 9.76*	*100*	*100*	*25,560*	*48.4*	*$.306*	*$13.37*	*100*	*100*	*15,218*	*50.4*	*$.191*	*$ 8.95*	*100*	*100*
1920																		
June.....	1,288	47.1	.441	19.41	242	199	34,868	44.8	.644	27.99	210	209	21,295	44.5	.376	18.71	197	209
July.....	988	39.1	.443	17.09	243	175	31,260	41.9	.632	27.28	207	204	19,035	42.6	.364	18.36	191	205
Aug.....	1,121	35.4	.412	16.47	226	169	30,548	41.0	.617	26.91	202	201	18,355	40.0	.388	17.82	203	199
Sept.....	1,021	38.9	.403	16.99	221	174	28,709	38.8	.603	26.05	197	195	16,577	38.4	.376	17.61	197	197
Oct.....	870	43.3	.434	17.58	238	180	26,914	40.8	.624	25.10	204	188	16,377	37.2	.444	16.99	232	190
Nov.....	862	40.2	.442	17.19	243	176	25,678	36.9	.602	24.05	197	180	14,996	36.9	.433	16.91	227	189
Dec.....	874	46.3	.423	18.40	232	189	24,972	38.6	.639	24.20	209	181	15,176	41.2	.400	17.34	209	194
1921																		
Jan.....	866	47.4	.385	17.89	212	183	23,004	41.5	.612	24.58	200	184	13,907	41.6	.390	16.97	204	190
Feb.....	1,007	46.8	.380	17.83	209	183	26,863	40.9	.633	27.33	207	204	16,151	42.9	.409	18.99	214	212
Mar.....	1,087	48.2	.383	17.41	210	178	27,702	44.9	.624	27.76	204	208	17,133	45.6	.382	19.19	200	215
April.....	1,065	46.6	.373	17.19	205	176	28,228	43.0	.612	26.91	200	201	17,516	43.3	.392	18.46	205	206
May.....	1,106	49.5	.344	17.18	189	176	29,414	45.6	.606	26.77	198	200	18,740	46.0	.381	18.03	199	202
June.....	1,136	48.6	.355	18.26	195	187	30,523	46.2	.603	26.91	197	201	19,407	45.7	.389	17.60	204	197

†25 establishments only.
*1914-1921 establishments only. See pp. 3, 5.

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5. The hours of the nominal week were reduced during the war period, but remained practically stationary during 1920-1921.

6. The average week of plant operation showed a marked reduction to the trough period in the winter of 1920 and a distinctive advance during the spring months of 1921.

7. Indications point to a fairly healthy condition of the industry, with slight reductions in employment and in hourly and weekly earnings.

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XIII

MEAT PACKING

The wage investigation in the meat packing industry includes those establishments engaged in the slaughtering, dressing and packing of meats. Wage statistics were compiled from 54 plants, employing 37,098 wage earners in June, 1920. Thirty-six of the establishments employed women. The data are representative of the industry, covering ten of the largest plants in the Chicago stock yards, and a good selection of independent plants scattered through the country. Over 22% of the wage earners listed in the 1919 Census of Manufactures as being employed in the meat packing industry are included in this report. The geographical distribution of plants within 24 states is as follows:

Alabama	1	Minnesota	3
California	1	Missouri	2
Colorado	1	New Jersey	2
Delaware	1	New York	2
Illinois	12	Ohio	6
Indiana	2	Oklahoma	1
Iowa	2	Pennsylvania	5
Kansas	2	Rhode Island	1
Kentucky	1	Tennessee	1
Maine	1	Texas	1
Massachusetts	1	West Virginia	2
Michigan	1	Wisconsin	2

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* show an increase of 174% from July, 1914 to July, 1920. The decline from the latter period up to July, 1921 was 15.3%, when the net increase was 132% over July, 1914. The peak was reached in the summer of 1920, and was generally maintained until toward the close of the year. In March, 1921 a marked decline was shown in hourly earnings. This was the result of the 12½% to 15% wage reduction made in the Chicago meat packing industry. The minimum wage in this locality was cut from 53 to 45 cents an hour. As ten of the largest companies included in the present investigation

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are Chicago meat packing houses, the entire wage curves may be said to be affected by this local situation. The drop in weekly earnings is also due to the wage cut made at this time.

In June, 1920 hourly earnings of *common labor* had increased 199% over July, 1914; those of *skilled labor*, 156%; and of *women*, 239%. The decline from June, 1920 up to July, 1921 amounted to 17.1% for *common labor*, 15.2% for *skilled labor*, and 19.1% for *women*. In June, 1921, the percentage increases over July, 1914 for the three groups were respectively 148%, 117% and 174%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 136% from July, 1914 to July, 1920, and declined from the latter period up to July, 1921, 16.4%, showing a net increase in the middle of June, 1921 of 97% over July, 1914.

At their respective high points in September, 1920 and June, 1920, weekly earnings of *common labor* were 160%, and of *skilled labor*, 120% above 1914. In October weekly earnings of *women* had increased 202%. In June, 1921 the declines from the high point were 18.9% for *common labor*, 16.3% for *skilled labor* and 21.7% for *women*. In June, 1921, the percentages of increase over July, 1914 for these three groups were respectively, 111%, 84% and 137%.

Employment

The total decline in employment from June, 1920 up to July, 1921 was 22.7%. The trend of employment shows a gradual decrease of 28% from June, 1920 to April, 1921, followed by a rise of 8% to June. The declines from June, 1920 up to July, 1921 by groups, were as follows: unskilled labor, 24%; skilled labor, 17%; women, 38%.

The increase in employment in identical establishments from July, 1914 to June, 1920 was 41%. The comparison of June, 1921 and July, 1914 shows a composite increase of 8.4% in the total numbers employed.

Hours

The average hours of the *nominal week* in July, 1914 were 58.8. Corresponding with the general reduction of working

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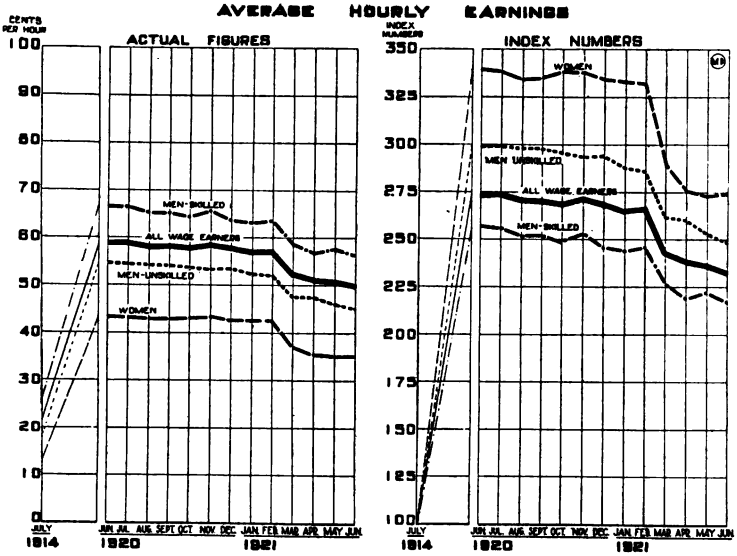

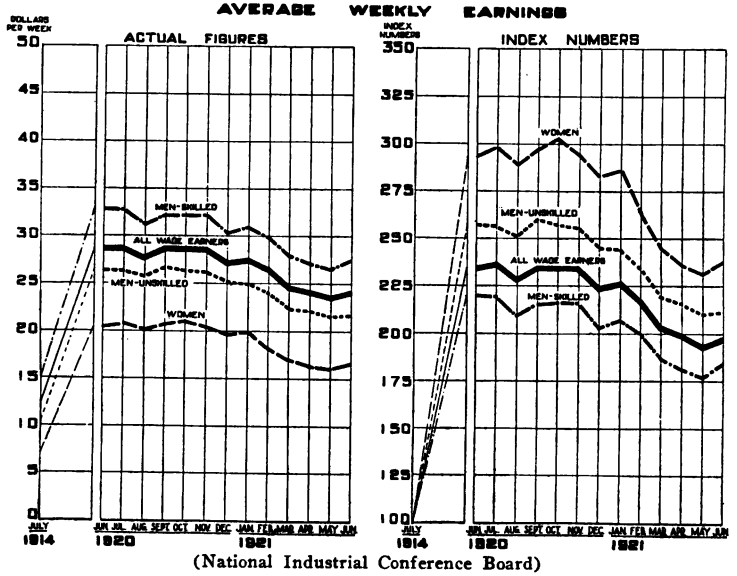

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week per Wage Earners	Av. Hrs. Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
								Hrly.	Wkly.
1914									
July*	*22,188*	*22,188*	*56.6*	*58.6*	*58.8*	*$.215*	*$12.18*	*100*	*100*
1920									
June	31,400	37,098	48.6	49.0	51.8	.587	28.56	273	234
July	31,583	37,064	48.7	48.9	51.8	.588	28.66	274	236
Aug	31,637	37,007	47.6	48.3	51.8	.582	27.69	271	228
Sept	31,084	36,348	49.1	48.6	51.8	.581	28.55	270	234
Oct	31,013	36,264	49.4	49.3	51.8	.578	28.53	269	234
Nov	29,843	35,177	48.8	48.9	51.8	.584	28.50	272	234
Dec	28,962	34,240	47.0	47.8	51.8	.579	27.22	269	224
1921									
Jan	26,516	31,673	48.2	48.5	52.0	.570	27.45	265	226
Feb	26,406	31,402	46.2	47.6	52.0	.572	26.43	266	217
Mar	24,542	29,242	47.2	47.9	51.9	.523	24.66	243	203
April	22,203	26,544	47.2	47.9	51.9	.510	24.07	238	199
May	23,500	28,073	46.3	47.9	51.9	.507	23.47	236	193
June	24,052	28,685	48.2	48.6	51.9	.498	23.90	232	197

*1914-1921 establishments only. See pp. 3, 5.

hours during the war period, there was a drop to 51.8 hours per week in June, 1920. This standard of hours remained practically stationary to the middle of June, 1921.

The trend of *actual average hours of plant operation* shows a reduction from 58.6 in July, 1914 to 49 in June, 1920. The remainder of the trend shows fluctuations, but, on the whole, the actual hours of plant operation have been close to the average hours of the nominal week. The meat packing industry has been little affected, therefore, by the economic depression existing in basic industries. Demand for meat and meat products continued, even though industry in general was passing through a period of retrenchment.

The average *actual hours per wage earner* showed a decline from 56.6 in July, 1914 to 48.6 in June, 1920. This obviously followed the trend in reduction of hours in plant operation and hours of the nominal week. The months of 1920 and 1921

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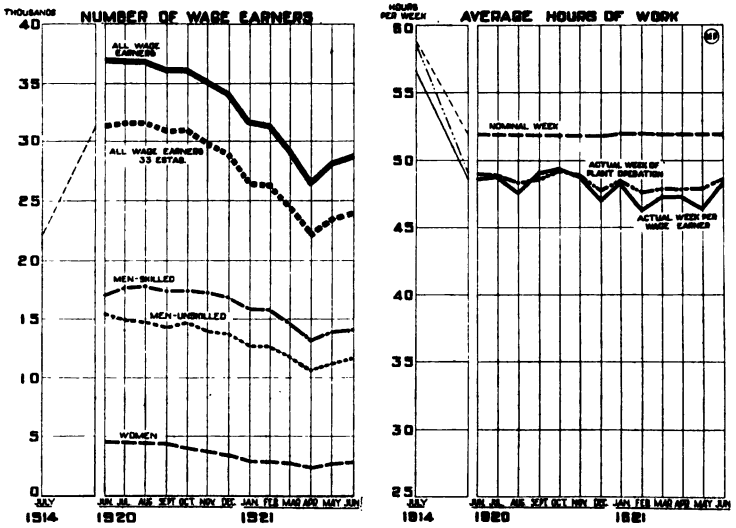

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show a general uniformity except in the month of February, 1921, when a low point of 46.2 hours was reached. The irregularity in the spring months was probably reflective of part-time operations and labor conditions existing in some of the larger companies. On the whole, hours in the meat packing industry show only a slight decline in comparison with the large reduction of hours in metal working trades and textiles during this period.

Conclusion

1. General wage reduction is approximately on the same level with many other basic industries.

2. Employment declined 23% from the peak up to July, 1921.

3. The total number of wage earners increased 8% from July, 1914 up to July, 1921.

4. The average hours of the nominal week declined from 58.8 in July, 1914 to approximately 52 hours in 1920-1921.

5. Plant activity reflects a small amount of part-time operation during the depression period in comparison with other basic industries.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos.		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*.....	*8,434*	*56.2*	*$.182*	*$10.24*	*100*	*100*	*11,055*	*57.5*	*$.259*	*$14.93*	*100*	*100*	*2,699*	*54.3*	*$.128*	*$ 6.95*	*100*	*100*
1920																		
June.....	15,467	48.4	.545	26.34	299	257	17,047	49.4	.664	32.79	256	220	4,584	46.9	.434	20.36	339	293
July.....	14,900	48.3	.544	26.25	299	256	17,623	49.3	.664	32.74	256	219	4,541	47.9	.432	20.73	338	298
Aug.....	14,705	47.4	.542	25.72	298	251	17,818	48.0	.652	31.25	252	209	4,484	46.9	.428	20.07	334	289
Sept.....	14,442	49.2	.542	26.66	298	260	17,466	49.3	.652	32.12	252	215	4,440	48.2	.429	20.65	335	297
Oct.....	14,724	48.9	.538	26.28	296	257	17,481	49.9	.644	32.18	249	216	4,059	48.6	.432	21.00	338	302
Nov.....	14,076	48.9	.535	26.13	294	255	17,316	49.9	.655	32.19	253	216	3,785	47.2	.433	20.46	338	294
Dec.....	13,848	47.2	.536	25.11	294	245	16,919	47.7	.637	30.38	246	203	3,473	46.2	.427	19.69	334	283
1921																		
Jan.....	12,827	47.7	.524	24.95	288	244	15,889	48.8	.632	30.86	244	207	2,957	46.7	.426	19.89	333	286
Feb.....	12,721	46.1	.521	24.00	286	234	15,795	46.9	.637	29.88	246	200	2,886	43.1	.425	18.27	332	263
Mar.....	11,844	47.0	.476	22.38	262	219	14,645	47.5	.588	27.93	227	187	2,753	45.9	.371	17.06	290	245
April.....	10,659	46.8	.472	22.12	260	216	13,387	47.6	.568	27.04	219	181	2,498	46.4	.353	16.39	276	236
May.....	11,259	46.6	.461	21.51	253	210	14,092	46.0	.575	26.46	222	177	2,722	46.0	.350	16.08	273	231
June.....	11,717	47.8	.452	21.61	248	211	14,115	48.7	.563	27.43	217	184	2,853	46.9	.351	16.44	274	237

*1914-1921 establishments only. See pp. 3, 5.

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XIV

CHEMICAL MANUFACTURING

A. Chemicals

The wage investigation in this industry covers establishments engaged in the manufacture of acids, salts, dye stuffs and other chemical products. A separate section has been devoted to an analysis of wage conditions in fertilizer manufacturing. Returns were received from 83 plants, employing 22,450 wage earners in July, 1920. Women were employed in 21 of these plants. Over 34% of the wage earners listed in the 1919 Census of Manufactures as then employed in this industry are covered in this investigation. The data are representative as to wage earners, distribution and size of establishments involved. The geographical distribution within 22 states and the District of Columbia is as follows:

Alabama	1	Massachusetts	5
California	3	Michigan	4
Colorado	1	Missouri	2
Connecticut	1	New Jersey	17
Delaware	1	New York	13
District of Columbia	1	North Carolina	2
Georgia	1	Ohio	5
Illinois	2	Pennsylvania	8
Indiana	2	Rhode Island	2
Kansas	2	West Virginia	4
Kentucky	2	Wisconsin	2
Maryland	2		

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 153% from July, 1914 to July, 1920. The decline from the latter period up to July, 1921 was 15.8%. At that time the increase was 113% over 1914. The trend reflects a gradual decline throughout the entire period, the most severe reduction in hourly earnings occurring between February and March, 1921.

In July, 1920 the hourly earnings of the male labor group showed increases above 1914 of 164% for *common labor* and

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139% for *skilled labor*. The high point of hourly earnings for *women* was reached in June, 1920, when the increase over 1914 was 156%. The percentages of decrease for the three groups from these various peaks up to July, 1921 were as follows: *common labor*, 17.8%; *skilled labor*, 13.7%; *women*, 12.9%. In June, 1921, the hourly earnings of *common labor* were 117%, those of *skilled labor* 106%, and those of *women*, 123% over 1914.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* showed an increase of 134% from July, 1914 to September, 1920, and declined 19.6% from the latter period up to July, 1921, leaving a net increase of 88% over July, 1914. The trend shows a gradual decline since the peak. The reduction of hourly earnings has influenced the general tendency more than fluctuations in working hours.

The peak of weekly earnings of *common labor* was reached in August, 1920, when the increase over 1914 was 141%; in September, 1920 those of *skilled labor* showed an increase of 130%, and in June and in September, *women* were receiving 103% more weekly wages than in 1914. The declines in these groups from their respective peaks up to July, 1921 were as follows: *common labor*, 19.4%; *skilled labor*, 21.7%; *women*, 7.7%. At the latter period the percentages of increase for the three groups were respectively 94%, 80%, and 88%.

There was a slight rise in weekly earnings for all groups between May and June, 1921, due to longer working hours.

Employment

From July, 1920 up to July, 1921 the decline in the total number of wage earners employed was 46%. Employment began to decrease in August, followed by slight declines through November. Beginning in December, more severe reductions took place, and the remainder of the period up to July, 1921 has seen a continual decrease. The percentages of decline from June, 1920 up to July, 1921 for these three groups were as follows: common labor, 48%; skilled labor, 43%; women, 41%. The severe decline in employment is due to the cessation of demand for the products of this industry during the period of industrial depression.

Between July, 1914 and June, 1920 the increase in employment in identical establishments was 79%. In June, 1921,

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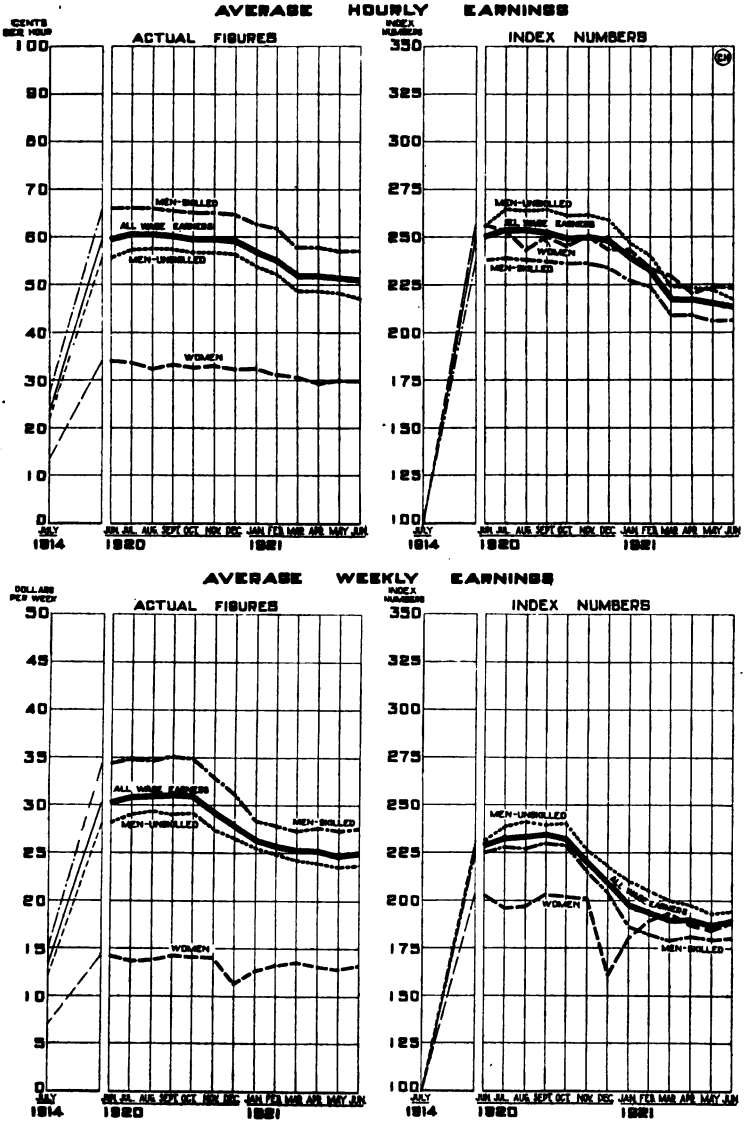

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hrs. Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
								Hrly.	Wkly.
1914									
July*....	*9,971*	*9,971*	*55.6*	*113.4*	*56.8*	*$.238*	*$13.26*	*100*	*100*
1920									
June.....	17,830	22,242	50.9	113.0	53.4	.594	30.24	250	228
July.....	18,055	22,450	51.1	112.3	53.4	.603	30.77	253	232
Aug.....	17,917	22,052	51.4	116.1	53.4	.602	30.91	253	233
Sept.....	17,987	21,648	51.6	115.7	53.4	.600	30.97	252	234
Oct.....	18,535	21,823	51.9	116.5	53.4	.593	30.82	249	232
Nov.....	17,273	20,194	49.1	114.9	53.4	.594	29.13	250	220
Dec.....	14,062	16,505	46.8	111.9	53.4	.591	27.68	248	209
1921									
Jan.....	11,973	14,024	46.0	112.3	53.4	.568	26.16	239	197
Feb.....	11,694	13,692	46.3	108.1	53.3	.551	25.55	232	193
Mar.....	11,250	13,182	48.5	107.4	53.3	.517	25.08	217	189
April....	10,645	12,414	48.5	108.9	53.0	.516	25.03	217	189
May.....	10,749	12,272	48.0	107.2	53.0	.512	24.61	215	186
June.....	10,514	12,122	49.0	110.7	53.0	.508	24.90	213	188

*1914-1921 establishments only. See pp. 3, 5.

employment in identical establishments had almost returned to the 1914 level.

Hours

Average hours of the *nominal week* in July, 1914 were 56.8. Following the general reduction of working hours during the war period, the hours dropped to 53.4 in June, 1920, the latter standard being maintained practically to March, 1921. At that time there was a further drop to 53 hours per week, which was maintained through June.

The *actual week of plant operation* in this two-shift industry shows a reduction from 113.4 hours in July, 1914 to 113 hours in June, 1920. Plant activity was well sustained in 1920, but declined severely in the spring months of 1921.

The *actual week per wage earner* declined from 55.6 hours in July, 1914 to 50.9 hours in June, 1920. There was a slight increase in working hours during the next month, but in No-

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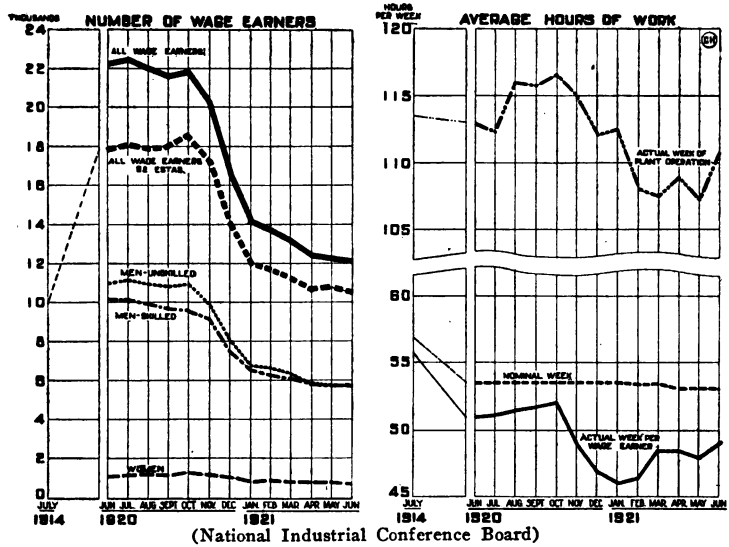

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vember declines again took place. In January, 1921 the low point of 46 hours per week was reached. Conditions improved slightly in February. From March up to July, working hours increased to an average of approximately 48½ hours per week, showing a return to more normal productive activity.

Conclusion

Investigation indicates gradual decline in weekly and hourly earnings and a tendency to severe reductions in employment rather than curtailment of manufacturing hours. Specifically, the report shows:

1. Decrease in both weekly and hourly earnings has been on the general level with the average found in other basic industries.

2. A severe decline in total employment of 46% has been caused by cessation in demand during the depression period.

3. The depression period occurred at the beginning of 1921, with marked revival in working hours toward the middle of the year.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*5,259*	*56.1*	*$.217*	*$12.17*	*100*	*100*	*4,281*	*55.3*	*$.276*	*$15.24*	*100*	*100*	*431*	*52.7*	*$.133*	*$ 7.00*	*100*	*100*
1920																		
June.....	10,991	50.7	.556	28.15	256	231	10,144	52.1	.658	34.25	238	225	1,107	41.8	.340	14.21	256	203
July.....	11,150	50.7	.572	28.97	264	238	10,133	52.7	.659	34.73	239	228	1,167	40.6	.337	13.70	253	196
Aug.....	10,935	51.1	.574	29.37	264	241	9,926	52.7	.658	34.66	238	227	1,191	42.6	.323	13.77	243	197
Sept.....	10,824	50.7	.573	29.03	264	239	9,691	53.7	.654	35.08	237	230	1,133	42.9	.332	14.23	250	203
Oct.....	10,957	51.5	.567	29.19	261	240	9,597	53.6	.651	34.88	236	229	1,269	43.4	.326	14.17	245	202
Nov.....	9,918	48.6	.566	27.48	261	226	9,127	50.4	.651	32.82	236	215	1,149	42.2	.333	14.04	250	201
Dec.....	8,041	47.3	.562	26.59	259	218	7,466	48.0	.647	31.05	234	204	998	34.8	.323	11.23	243	160
1921																		
January..	6,729	47.6	.537	25.59	247	210	6,521	45.3	.627	28.36	227	186	774	39.1	.323	12.62	243	180
Feb.....	6,604	48.0	.521	24.98	240	205	6,258	45.1	.617	27.78	224	182	830	42.7	.310	13.23	233	189
Mar.....	6,350	50.1	.487	24.38	224	200	6,048	47.4	.577	27.31	209	179	784	44.2	.305	13.50	229	193
April.....	5,886	49.6	.485	24.06	223	198	5,765	48.0	.577	27.61	209	181	763	44.7	.293	13.10	220	187
May.....	5,786	48.9	.482	23.54	222	193	5,746	47.8	.569	27.21	206	179	740	43.4	.298	12.91	224	184
June.....	5,730	50.2	.472	23.67	217	194	5,734	48.3	.569	27.47	206	180	658	44.4	.296	13.14	223	188

*1914-1921 establishments only. See pp. 3, 5.

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B. Fertilizer Manufacturing

The wage investigation in this industry is confined to establishments manufacturing agricultural chemicals and fertilizers. The conditions in these branches of the chemical industry are so different from those in other chemical manufacturing that separate classification was made. The fertilizer manufacturing industry is generally confined to plants in southern states employing a large proportion of common labor. In addition, seasonal fluctuations are marked in this industry. A total of 66 establishments was covered, employing 8,522 wage earners at the high point in August, 1920. The number of female wage earners was not tabulated, as the total number of this group is relatively small. Over 37% of the wage earners listed in the 1914 Census of Manufactures in this industry are covered in this investigation. The geographical distribution within 20 states is as follows:

Alabama	3	Michigan	1
Arkansas	1	New Hampshire	1
California	3	New Jersey	4
Connecticut	1	North Carolina	7
Florida	4	Ohio	7
Georgia	14	Pennsylvania	1
Illinois	1	South Carolina	7
Indiana	1	Tennessee	1
Louisiana	1	Texas	1
Maryland	3	Virginia	4

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* showed an increase of 135% from July, 1914 to September, 1920. The decline from the latter period up to July, 1921 was 28.7%, leaving in June, 1921 a net increase of 67% above 1914. The trend of hourly earnings shows a well-sustained level through November, 1920. Beginning in December, wage cutting began to take effect, with more severe reductions continuing in 1921. A slight increase occurred between March and June, 1921.

The peak of hourly earnings for *common labor* was reached in September, 1920, when there was an increase of 133% above 1914, while those of *skilled labor* were 161% higher in August, 1920. The percentages of decline from these peaks up to July, 1921 were, for *common labor*, 35% and for *skilled*

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labor, 20.4%. In the middle of June, 1921, *common labor* was still 52% above 1914 and *skilled labor* 108%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 127% from July, 1914 to July, 1920 and declined 34.2% from the latter period up to July, 1921, leaving a net increase of 49%. Weekly earnings maintained a high level through October, 1920. Beginning in November, due to reductions in both hourly earnings and working hours, decreases began to occur. At the beginning of 1921 these became more severe and continued even more rapidly during the early months of the spring. There was a slight revival in May and June, due to an increase in both hourly earnings and working hours.

The peak of weekly earnings for *common labor* was reached in July, 1920, when there was shown an increase of 121% above 1914. Wages declined 40.4% from this point up to July, 1921. At this time they were 32% above 1914. The peak for *skilled labor* was reached in August, 1920 when there was indicated an increase of 172% above 1914. Wages remained practically stationary until November, when the general decline began, which continued up to July, 1921, amounting to 25.6%. In June, 1921 wages for the *skilled labor* group were 103% above 1914.

Employment

The total decline in the number of wage earners employed from August, 1920 up to July, 1921 was approximately 65.9%. A steady decline occurred to February, 1921. In March there was a marked increase in employment, due to seasonal conditions, followed by a steady decline to June, 1921, amounting to 62.1%. The percentages of decline from the peak in employment were, for common labor, 69%, and for skilled labor, 50.6%. Comparison of employment in identical establishments between July, 1914 and August, 1920 shows a 55.3% increase. In June, 1921, approximately 38.2% fewer wage earners were employed than in July, 1914.

Hours

The average hours of the *nominal week* in July, 1914 amounted to 60. A small decrease took place in the following years, so

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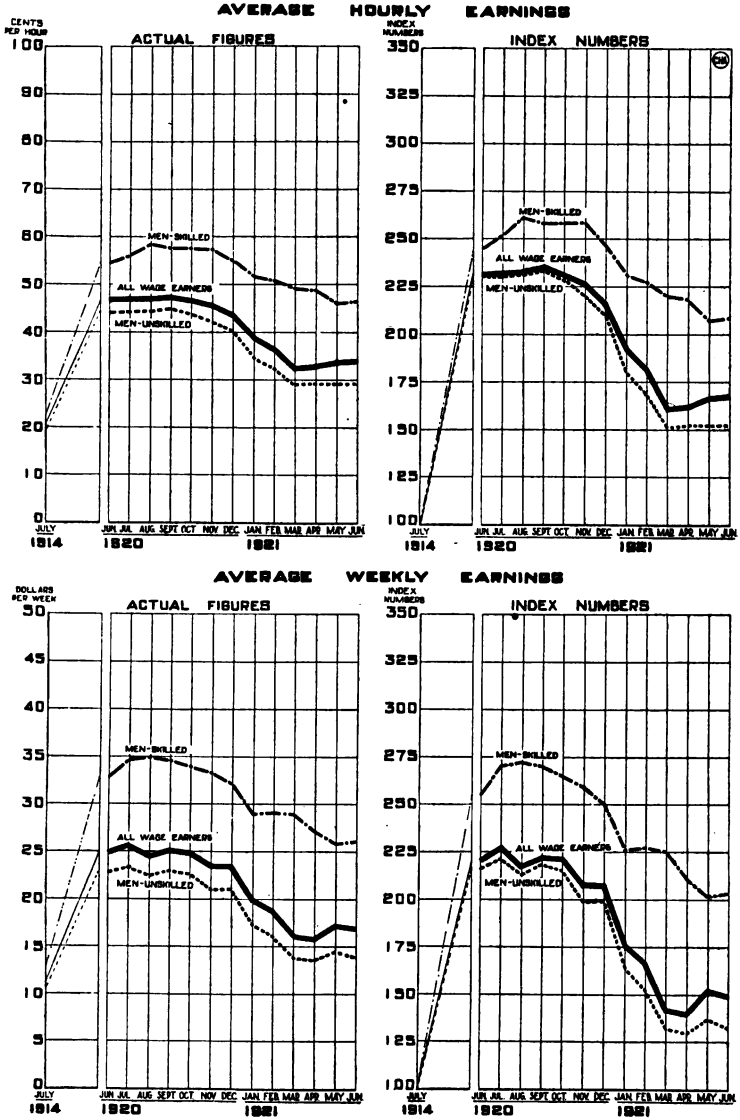

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs	Av. Wkly. Earngs.	Index Nos. Earnings Hrly.	Index Nos. Earnings Wkly.
1914									
July*....	*3,267*	*3,267*	*55.8*	*59.0*	*60.0*	*$.202*	*$11.29*	*100*	*100*
1920									
June.....	3,976	6,252	53.4	56.7	58.4	.466	24.87	231	220
July.....	4,146	6,865	54.5	58.4	58.4	.469	25.58	232	227
Aug....	5,074	8,522	52.1	57.0	58.4	.470	24.51	233	217
Sept....	4,716	7,999	52.7	56.5	58.4	.474	25.02	235	222
Oct.....	4,349	7,329	53.2	55.5	58.3	.467	24.89	231	221
Nov.....	3,996	6,809	51.2	56.4	58.2	.457	23.47	226	208
Dec.....	3,964	6,286	53.4	55.7	58.2	.437	23.36	216	207
1921									
Jan.....	3,498	5,421	51.4	57.2	58.2	.388	19.90	192	176
Feb.....	3,673	5,520	51.2	56.5	58.2	.365	18.70	181	166
March..	4,625	7,667	49.4	55.5	58.1	.325	16.06	161	142
April....	3,637	6,005	48.1	55.0	58.1	.328	15.77	162	140
May.....	2,339	3,372	51.0	57.2	58.0	.336	17.13	166	152
June.....	2,018	2,908	49.8	52.5	58.0	.338	16.84	167	149

*1914-1921 establishments only. See pp. 3, 5.

that in June, 1920 the average hours were 58.4. In June, 1921 the nominal week was 58 hours.

The *average week of plant operation* decreased from 59 hours in July, 1914 to 56.7 hours in June, 1921. The slight stimulus in employment in the summer of 1920 also shows in the rise in plant hours. Beginning with October, however, there was a slight tendency toward decrease in plant activity, but, generally speaking, the level of plant activity has been well sustained through the period of industrial depression. A large reduction occurred between May and June, 1921, amounting to over 4½ hours.

The *average week per wage earner* amounted to 55.8 hours in July, 1914. In June, 1920 there was a decrease to 53.4 hours. Declines were noted in August and September, 1920, but the average working week was well maintained through 1920 and the opening months of 1921. The depression, however, began

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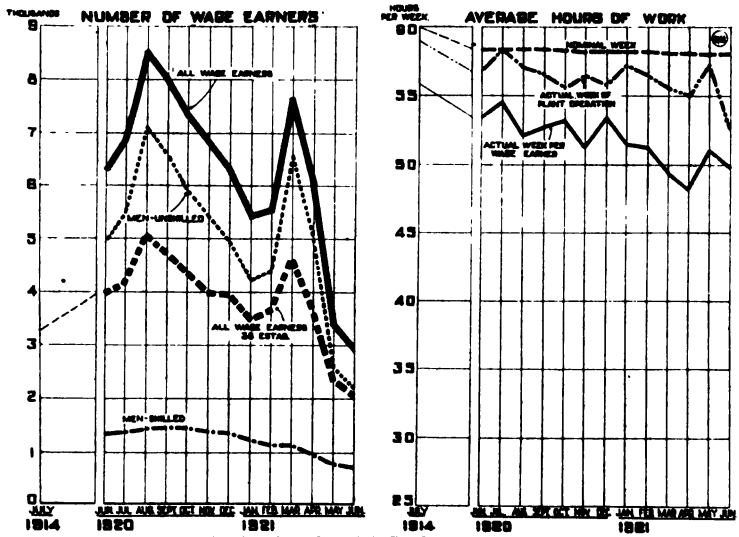

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to take effect in March and April, followed by a revival in May and a recession in June, 1921.

Conclusion

1. The decline in hourly earnings has been far more extensive than in chemical manufacturing, and considerably above the average in other basic industries.

2. The decline in weekly earnings has been due not so much to a decrease in working hours as to wage reductions. The fertilizer industry has been very directly affected by industrial depression. The early deflation of farm products curtailed the buying power and credit of farmers, who have not been purchasing as much as in former years. The consequence was an early cessation of demand for agricultural chemicals. The tendency has been for reduction in employment rather than a curtailment of plant activity. The workers who have been retained upon the payroll have also worked fairly constant hours.

3. While this industry has been permanently affected by industrial conditions, the indirect effect of seasonal fluctuations should also be considered. These are shown in the irregularities in employment and hours of plant activity.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.
1914												
July*	*2,190*	*55.0*	*$.192*	*$10.54*	*100*	*100*	*1,077*	*57.5*	*$.223*	*$12.84*	*100*	*100*
1920												
June	4,921	51.6	.441	22.75	230	216	1,331	60.1	.545	32.74	244	255
July	5,495	52.7	.442	23.32	230	221	1,370	61.9	.560	34.66	251	270
Aug	7,103	50.6	.443	22.43	231	213	1,419	60.0	.583	34.98	261	272
Sept	6,568	51.2	.448	22.94	233	218	1,431	60.1	.576	34.61	258	270
Oct	5,896	51.8	.438	22.69	228	215	1,433	59.1	.575	33.97	258	265
Nov	5,423	49.5	.423	20.95	220	199	1,386	58.1	.573	33.31	258	259
Dec	4,937	52.1	.403	20.98	210	199	1,349	58.3	.550	32.06	247	250
1921												
Jan	4,201	50.0	.346	17.27	180	164	1,220	56.2	.516	29.00	231	226
Feb	4,387	49.6	.323	16.02	168	152	1,133	57.4	.507	29.11	227	227
March	6,541	47.8	.290	13.87	151	132	1,126	58.8	.491	28.85	220	225
April	5,029	46.6	.291	13.57	152	129	976	55.7	.487	27.13	218	211
May	2,583	49.5	.292	14.48	152	137	789	55.9	.462	25.82	207	201
June	2,200	47.8	.291	13.90	152	132	708	56.1	.464	26.01	208	203

*1914-1921 establishments only. See pp. 3, 5.

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XV

PAINT AND VARNISH MANUFACTURING

The wage investigation in this industry covers plants engaged in the manufacture of white lead, colors, paint and varnish. Returns were received from 58 plants, 29 of which employed women. The total number of wage earners covered at the high point in August, 1920 was 3,978. The coverage represents over 17% of the wage earners listed in the 1919 Census of Manufactures, as then employed in this industry. The geographical distribution within 15 states is as follows:

California	3	New Jersey	4
Colorado	1	New York	7
Delaware	1	Ohio	11
Illinois	4	Pennsylvania	7
Indiana	3	Rhode Island	1
Massachusetts	5	Texas	1
Michigan	4	Wisconsin	2.
Missouri	4		

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* showed an increase of 112% from July, 1914 to July, 1920. The decline from the latter period up to July, 1921 was 8.8%. In June, 1921, hourly earnings stood 94% over July, 1914. The decline throughout 1920-21 has been moderate and gradual. The peak for male labor was reached in July, 1920, when *common labor* showed an increase of 119% and *skilled labor* 102% over 1914. The peak for *women* was reached in January, 1921, when the increase over July, 1914 reached 105%. The declines for these groups from the peak months up to July, 1921 were 8.9% for *common labor*, 10.6% for *skilled labor* and 2.5% for *women*. In June, 1921, the percentages of increase above July, 1914 for these three groups were respectively 99%, 81% and 100%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 101% between July, 1914 and July,

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1920. The decline from the latter period up to July, 1921, amounted to 12.6%. The period has been characterized by gradual and moderate declines resulting more from reduction in working hours than from wage decreases. In June, 1921, the net increase over 1914 amounted to 75%.

The high point of weekly earnings for *common labor* was reached in July, 1920 when there was an increase of 110%, and in September, 1920 for *skilled labor* with an increase of 87% over July, 1914. The peak for *women* was not reached until November, when their weekly earnings had increased 92% over 1914. The declines for each of these groups from the peak months up to July, 1921 were 13.5% for *common labor*, 13.3% for *skilled labor*, and 5.8% for *women*. In June, 1921, the percentages of increase above 1914 for each of these groups were respectively 82%, 62% and 81%.

Decline in wages has been moderate, with gradual decreases occurring throughout the period of the investigation. The reduction of both hourly and weekly earnings has been less than the average in other basic industries.

Employment

Total employment decreased 31.3% from August, 1920, up to July, 1921. The trough period was reached in March and a slight increase occurred between the latter period and the end of 1921. Employment has been at least indirectly affected by stagnation in demand for the products of this industry, caused by conditions in the building trades, and by a stoppage of general domestic consumption.

The total number of employees in identical establishments increased 71% between July, 1914, and June, 1920. In June, 1921, 35% more employees were occupied in identical establishments than in July, 1914. Comparison between the Census of 1914 and that of 1919 shows a rise of over 45% in the number of wage earners employed. The present wage investigation shows a greater growth in identical establishments than for the industry as a whole.

Hours

The hours of the *nominal week* in July, 1914, were 52.3. Following the general reduction in length of working hours

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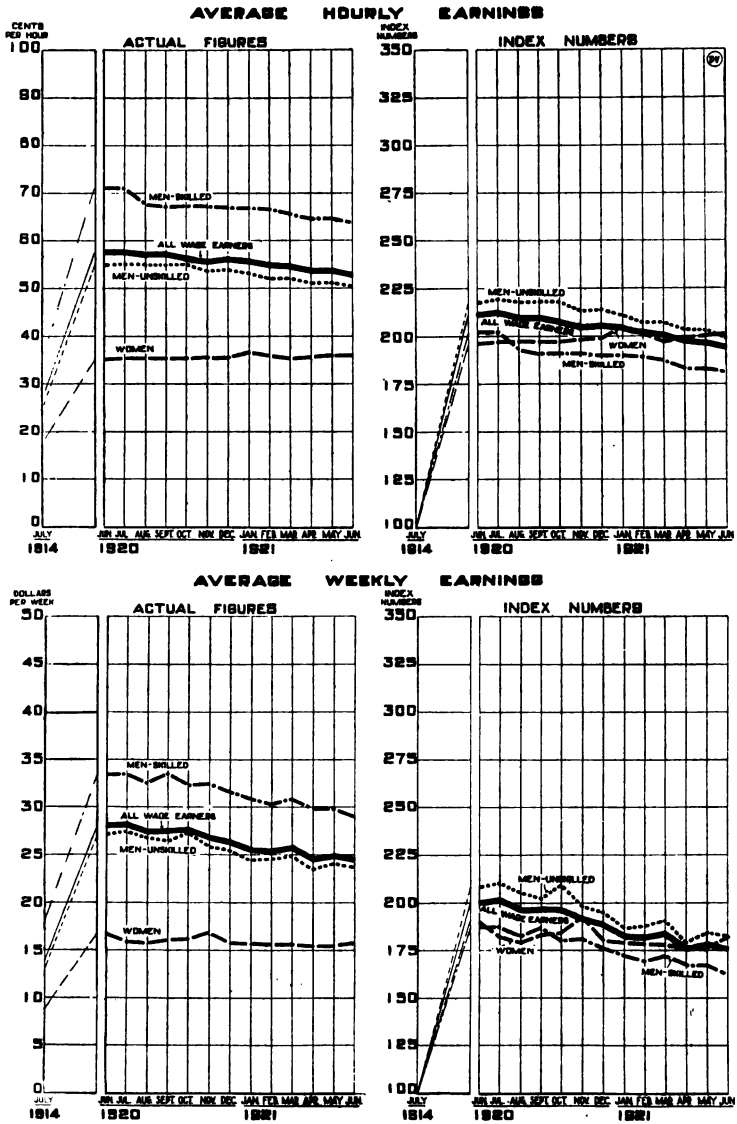

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
								Hrly.	Wkly.
1914									
July*..	*1,073*	*1,073*	*51.3*	*52.1*	*52.3*	*$.272*	*$13.96*	*100*	*100*
1920									
June...	1,838	3,819	48.6	50.9	50.1	.575	27.93	211	200
July...	1,855	3,931	48.4	50.0	50.1	.578	28.00	212	201
Aug....	1,936	3,978	48.0	49.4	50.1	.569	27.31	209	196
Sept...	1,963	3,821	48.1	50.0	50.1	.568	27.34	209	196
Oct....	1,901	3,603	48.7	50.4	50.1	.562	27.39	207	196
Nov...	1,729	3,285	48.0	48.4	50.1	.555	26.62	204	191
Dec....	1,586	2,879	46.9	47.8	50.0	.558	26.19	205	188
1921									
Jan....	1,472	2,708	45.7	47.0	50.0	.555	25.37	204	182
Feb....	1,488	2,711	46.3	47.6	50.0	.546	25.27	201	181
March.	1,416	2,673	47.1	48.0	50.0	.543	25.58	200	183
April...	1,454	2,708	45.7	48.2	50.0	.535.	24.43	197	175
May...	1,422	2,704	46.3	46.9	50.0	.535	24.79	197	178
June...	1,452	2,732	46.4	47.5	50.0	.527	24.46	194	175

*1914-1921 establishments only. See pp. 3, 5.

during the war period, the week was reduced to 50.1 hours in June, 1920. The latter standard was maintained throughout 1920-1921.

The *actual week of plant operation* of 52.1 hours in July, 1914, was reduced to 50.9 hours in June, 1920. In the fall of 1920 reduction in plant activity began to occur, reaching a trough period at the beginning of 1921. A slight revival occurred in the spring, though in June, 1921, there was a loss of 3.4 hours from the preceding year in plant activity.

The *actual week per wage earner* showed a decline from 51.3 hours in July, 1914, to 48.6 hours in June, 1920. The depression took effect in December, reaching in January the low level of 45.7 hours. There was a slight increase during the spring months of 1921. The reduction in hours has affected earnings more directly than wage cutting, yet the tendency has been to reduce the number of wage earners rather than cut hours severely.

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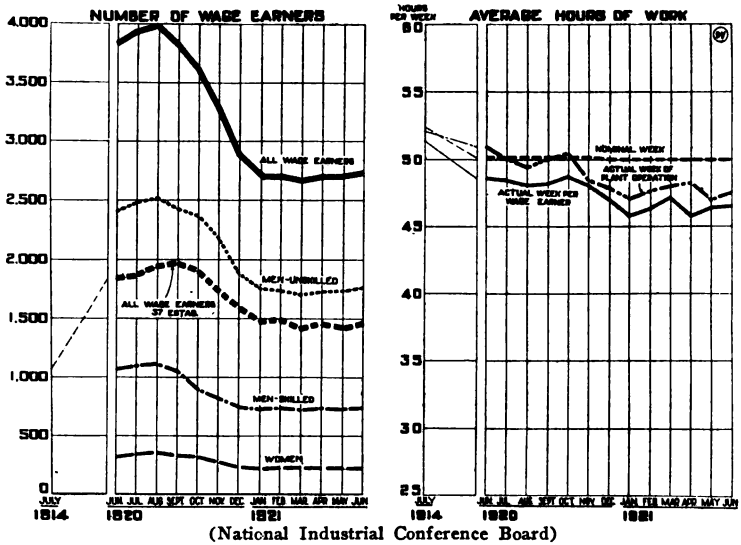

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Conclusion

1. The decrease of 8.8% shown in hourly earnings and the reduction of 12.6% in weekly earnings is less than in many other basic industries. The tendency has been to reduce hours rather than wages.

2. Reduction of wages for women has been less than for male employees.

3. Stagnation in demand has caused a curtailment of working hours and a decrease of 31.3% in employment.

4. In general, wages in June, 1921, were still on a high level in comparison with general wage conditions.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*730*	*51.7*	*$.252*	*$13.03*	*100*	*100*	*270*	*51.0*	*$.351*	*$17.88*	*100*	*100*	*73*	*48.9*	*$.179*	*$8.74*	*100*	*100*
1920																		
June.....	2,416	49.4	.548	27.07	217	208	1,070	46.9	.710	33.37	202	187	333	47.6	.350	16.64	196	190
July.....	2,470	49.6	.551	27.34	219	210	1,108	47.0	.710	33.36	202	187	353	45.0	.353	15.87	197	182
Aug.....	2,503	48.5	.550	26.70	218	205	1,111	48.0	.676	32.48	193	182	364	44.3	.353	15.66	197	179
Sept.....	2,426	47.9	.550	26.33	218	202	1,051	49.6	.672	33.38	191	187	344	45.4	.353	16.02	197	183
Oct.....	2,371	49.4	.550	27.17	218	209	897	47.9	.672	32.20	191	180	335	45.6	.353	16.10	197	184
Nov.....	2,187	48.0	.537	25.77	213	198	815	48.1	.672	32.32	191	181	283	47.2	.355	16.77	198	192
Dec.....	1,885	47.1	.539	25.41	214	195	750	47.2	.668	31.51	190	176	244	44.2	.357	15.77	199	180
1921																		
Jan.....	1,763	46.0	.531	24.40	211	187	719	46.1	.667	30.79	190	172	226	42.8	.367	15.69	205	179
Feb.....	1,747	47.0	.521	24.49	207	188	732	45.5	.664	30.21	189	169	232	43.2	.360	15.54	201	178
March...	1,714	47.6	.521	24.81	207	190	722	46.8	.656	30.70	187	172	237	43.9	.353	15.53	197	178
April.....	1,743	45.8	.511	23.38	203	179	733	46.3	.644	29.80	183	167	232	43.2	.356	15.38	199	176
May.....	1,747	46.8	.512	23.95	203	184	727	46.2	.644	29.77	183	167	230	43.0	.358	15.42	200	176
June.....	1,768	47.1	.502	23.65	199	182	743	45.6	.635	28.95	181	162	221	44.0	.358	15.79	200	181

* 1914-1921 establishments only. See pp. 3, 5.

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XVI

PAPER MANUFACTURING

A. Paper and Wood Pulp Manufacturing

The wage investigation in this industry covers establishments producing paper and wood pulp. It does not include secondary paper manufacturing, which has been classified under a separate industrial section entitled, "Paper Products Manufacturing." Returns were received from 122 plants, employing 30,792 wage earners at the high point in July, 1920. Women were employed in 78 plants. Over 26% of the wage earners listed by the 1919 Census of Manufactures in this industry were covered in this investigation. The geographical distribution within Canada and 19 states is as follows:

Canada	3	New Hampshire	2
Connecticut	3	New Jersey	6
Illinois	1	New York	26
Indiana	1	Ohio	9
Iowa	1	Pennsylvania	5
Maine	10	Virginia	1
Maryland	1	Vermont	4
Massachusetts	25	Washington	1
Michigan	6	West Virginia	1
Minnesota	2	Wisconsin	14

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 169% from July, 1914 to November, 1920. The decline from the latter period up to July, 1921 amounted to 14.7%, showing a net increase in June, 1921 of 129% over 1914. The trend reflects a gradual decline throughout the entire year. The most severe reductions occurred in the spring months of 1921. In October, 1920, the hourly earnings of *common labor* were 170% above 1914. In November, 1920, those of *skilled labor* showed an increase of 149% and in July, 1920, those of *women* were 193% higher than in 1914. The percentages of decline for the three groups from the respective peaks up to July, 1921, were as follows: *common labor,*

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17.2%; *skilled labor*, 12.5%; *women*, 14.1%. There was a slight rise for skilled men and for women between May and June, 1921; otherwise, there has been a gradual decline for all three groups from the high point. In June, 1921, the hourly earnings of *common labor* were 123% over 1914, those of *skilled labor*, 118%, and those of *women*, 151%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* showed an increase of 156% from July, 1914 to October, 1920 and from the latter period up to July, 1921 declined 24.1%, leaving a net increase of 94% over July, 1914.

The peak of weekly earnings for the male labor group occurred in October, 1920, when those of *common labor* showed an increase of 152% and those of *skilled labor* an increase of 130% over 1914. The peak for *women* was reached in both July and September, 1920, when there was an increase of 196% over 1914. The percentages of decrease for these three groups from their respective peaks up to July, 1921 were: *common labor*, 25.1%; *skilled labor*, 21.5%; *women*, 30.8%. In June, 1921, the weekly earnings of *common labor* were 89% above 1914, those of *skilled labor*, 81%, and those of *women*, 105%.

Both hourly and weekly earnings were sustained through the months of 1920. The result of wage cutting and part-time operation began to take marked effect in February, 1921 and there have been continued reductions, particularly in weekly earnings, since that time. The loss of working hours more than extensive wage cutting has affected earnings.

Employment

The decline in the total number of wage earners employed from the high point in July, 1920 up to July, 1921 was 48.6%. As extensive strikes were occurring in many of the plants between April and June, 1921, a true comparison of employment conditions should be made only between July, 1920 and April, 1921, when the decline amounted to 19.8%. While the strike conditions reflect unemployment, the situation is not comparable with general unemployment conditions existing in other basic industries. The most extensive decline in employment in any group between the summer of 1920 and April, 1921 occurred among female wage earners.

Total employment increased 47% in identical establish-

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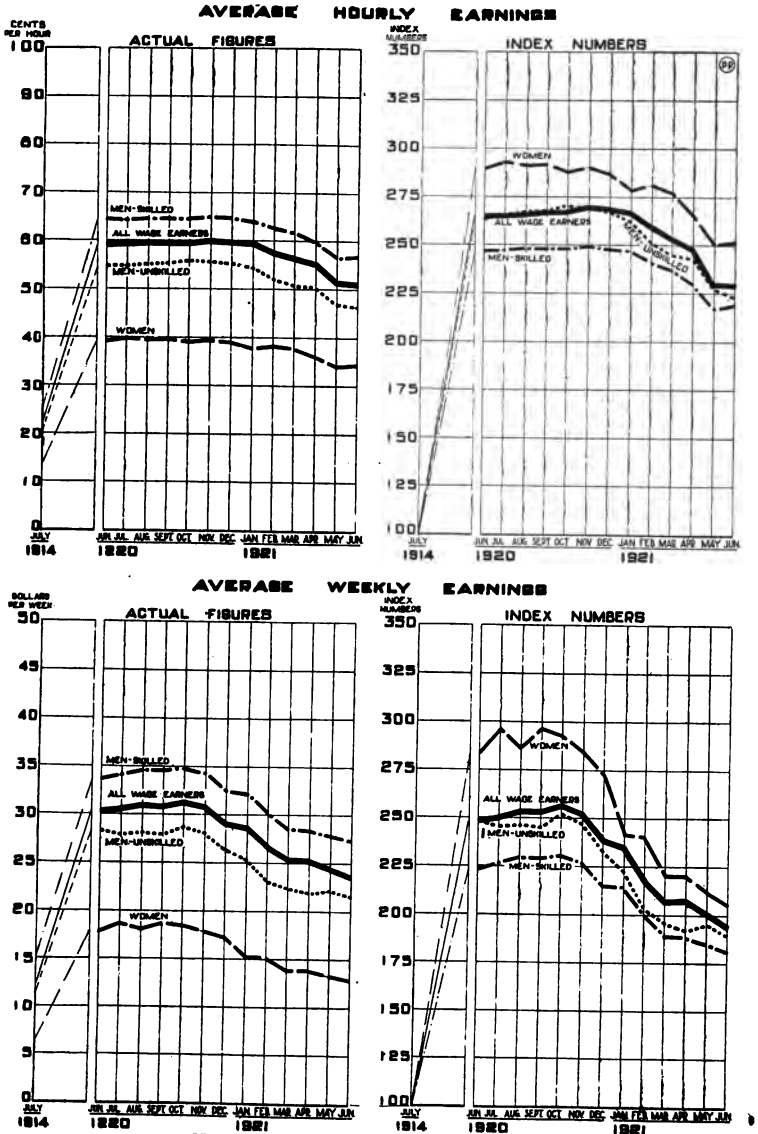

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*	*14,174*	*14,174*	*54.7*	*138.3*	*57.6*	*$.223*	*$12.20*	*100*	*100*
1920									
June	20,842	30,585	51.4	142.5	50.8	.590	30.30	265	248
July	20,906	30,792	51.7	141.8	50.8	.591	30.51	265	250
Aug.	20,798	30,711	51.9	141.7	50.8	.594	30.87	266	253
Sept	20,945	30,750	51.8	141.7	50.8	.595	30.83	267	253
Oct	20,939	30,676	52.4	140.7	50.8	.596	31.22	267	256
Nov	20,431	30,053	51.4	139.1	50.8	.599	30.78	269	252
Dec	19,741	29,125	48.9	131.9	50.7	.597	29.16	268	239
1921									
Jan	17,696	26,191	48.2	132.5	50.7	.594	28.65	266	235
Feb	17,872	25,735	46.2	130.3	50.6	.577	26.65	259	218
March	16,621	23,779	44.7	122.8	50.6	.565	25.28	253	207
April	16,561	24,692	45.5	126.3	50.6	.554	25.21	248	207
May	14,971	17,085	47.6	124.0	50.6	.513	24.39	230	200
June	14,254	15,812	46.4	125.7	50.7	.511	23.71	229	194

*1914-1921 establishments only. See pp. 3, 5.

ments between July, 1914 and June, 1920. In June, 1921, employment had fallen to practically the 1914 level.

Hours

The average hours of the *nominal week* in July, 1914 were 57.6. Following the general reduction in working hours during the war period, the hours dropped to 50.8 in June, 1920, the latter standard having been practically maintained throughout 1920-1921.

The *actual week of plant operation* showed an increase from 138.3 hours in July, 1914 to 142.5 hours in June, 1920. In December, 1920, a marked reduction to 131.9 hours occurred, and in the opening months of 1921, the decline continued. The depression month in March was followed by a revival in April, but strike conditions brought about declines in May and June.

The *actual week per wage earner* showed a decline from 54.7 hours in July, 1914, to 51.4 hours in June, 1920. There was a

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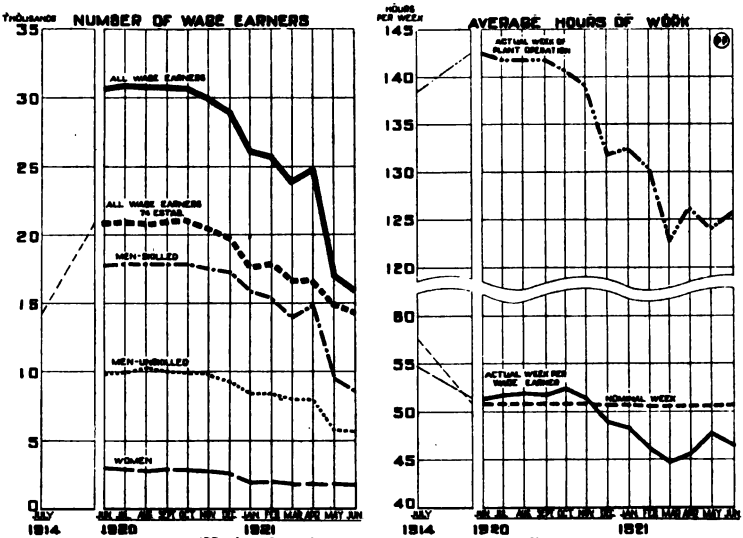

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tendency toward an increase of working hours culminating in a slight peak in October, 1920. Beginning in December, there was a marked decline which continued to the trough period in March, 1921. April and May showed a marked increase in working hours, but labor conditions in June forced a reduction.

Conclusion

1. The decrease in hourly earnings has been slightly below the general level of that occurring in many other basic industries. Reduction in weekly earnings has been extensive, due to the decline of working hours.

2. The period of April, May and June, 1921 is difficult of interpretation on account of labor conditions existing in a large proportion of the plants studied.

3. Total employment declined approximately 20% between July, 1920 and April, 1921, and 49% between July, 1920 and June, 1921.

4. The trend of hours of plant activity best reflects the condition of this industry, showing substantial production though November, 1920, marked declines in the first three months of 1921, and unsettled conditions in May and June.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*5,186*	*54.9*	*$.207*	*$11.39*	*100*	*100*	*6,546*	*57.8*	*$.260*	*$15.05*	*100*	*100*	*2,442*	*46.1*	*$.136*	*$6.28*	*100*	*100*
1920																		
June.....	9,802	51.8	.545	28.24	263	248	17,768	52.2	.643	33.57	247	223	3,015	45.2	.393	17.76	289	283
July.....	9,984	50.9	.548	27.89	265	245	17,852	52.9	.642	34.02	247	226	2,956	46.6	.398	18.58	293	296
Aug.....	10,106	50.9	.551	28.05	266	246	17,819	53.6	.644	34.49	248	229	2,786	45.4	.396	17.99	291	286
Sept.....	10,053	50.4	.553	27.87	267	245	17,801	53.4	.645	34.51	248	229	2,896	46.8	.397	18.57	292	296
Oct.....	9,983	51.4	.558	28.69	270	252	17,830	53.8	.645	34.69	248	230	2,863	46.9	.392	18.38	288	293
Nov.....	9,807	50.5	.556	28.09	269	247	17,567	52.9	.648	34.24	249	227	2,679	45.3	.394	17.86	290	284
Dec.....	9,281	47.8	.552	26.41	267	232	17,259	50.2	.646	32.43	248	215	2,585	43.9	.391	17.16	287	273
1921																		
Jan.....	8,442	46.5	.543	25.26	262	222	15,788	50.2	.641	32.14	247	214	1,961	40.1	.378	15.17	278	242
Feb.....	8,355	44.5	.520	23.11	251	203	15,381	48.0	.627	30.08	241	200	1,999	39.5	.382	15.09	281	240
March...	8,117	44.1	.507	22.36	245	196	13,841	46.2	.617	28.50	237	189	1,821	36.7	.377	13.84	277	220
April.....	8,015	43.5	.503	21.90	243	192	14,880	47.4	.599	28.37	230	188	1,797	38.2	.361	13.81	265	220
May.....	5,758	47.3	.469	22.18	227	195	9,536	49.2	.565	27.81	217	185	1,791	39.1	.340	13.30	250	212
June.....	5,607	46.5	.462	21.50	223	189	8,566	48.1	.567	27.24	218	181	1,639	37.5	.342	12.85	251	205

* 1914-1921 establishments only. See pp. 3, 5.

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B. Paper Products Manufacturing

The wage investigation in this industry is confined to establishments engaged in the manufacture of paper products, such as paper boxes, cardboard, envelopes and miscellaneous paper goods. Wage schedules were received from 56 plants, employing 8,705 wage earners at the high point in October, 1920. Women were employed in 53 of these plants. Approximately 29% of the wage earners listed in the 1919 Census of Manufactures as being then employed in this industry were included in the present investigation. The geographical distribution, within 16 states, is as follows:

California	1	Michigan	4
Colorado	1	Minnesota	1
Connecticut	4	New Jersey	1
Illinois	5	New York	4
Indiana	5	Ohio	5
Iowa	1	Pennsylvania	3
Maine	1	Rhode Island	1
Massachusetts	17	Wisconsin	2

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 154% from July, 1914 to September, 1920, and from the latter period up to July, 1921 decreased 4.9%, leaving a net increase of 142% over 1914. The trend shows practically a stationary condition throughout the entire period, although temporary depression was indicated in December, 1920.

The hourly earnings of *common labor* in September, 1920 had increased 189% over 1914. Those of *skilled labor* showed an increase of 151% in November and December, 1920, while those of *women* reached a peak of 141% in October, 1920. The percentages of decline from these various peaks up to July, 1921 were as follows: *common labor*, 14.9%; *skilled labor*, 5.6%; *women*, 1.7%. In the middle of June, 1921, the hourly earnings of *common labor* were 146% above 1914, while those of *skilled labor* and *women* showed an increase of 137% each.

(b) *Weekly earnings:* The composite weekly earnings of *all wage earners* showed an increase of 139% from July, 1914 to September, 1920 and declined 20.4% from the latter period up to July, 1921, leaving a net increase of 90% over 1914. The trend shows a gradual decline through February, 1921.

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In March, a temporary revival due to longer working hours occurred, but reduction continued in April. May and June, however, showed a slight stimulation.

The high point of weekly earnings for *common labor* occurred in July, 1920, when there was an increase of 154% over July, 1914; those of *skilled labor* reached a peak of 140% in September, 1920; and in October, the high point of 129% was reached for *women*. The percentages of decline from these various peaks up to July, 1921 were as follows: *common labor*, 31.5%; *skilled labor*, 21.5%; *women*, 17.1%. The percentages of increase over 1914 for each of the three groups up to July, 1921 were respectively 74%, 89% and 89%.

In general, the reduction in working hours has had more effect upon the trend of wages than wage cutting. Hourly earnings have shown only a slight reduction, while weekly earnings have shown a marked decline, due to reduction in working hours.

Employment

The total number of wage earners declined approximately 34.4% from October, 1920 up to July, 1921. The decline in employment proceeded more rapidly at the beginning of 1921 and continued throughout the spring of 1921 except for the month of April, when there was a slight revival. The decline in employment has affected common labor and women more seriously than skilled labor. Employment in identical establishments increased from July, 1914 to June, 1920 approximately 34.1%. In the middle of June, 1921, the total number of wage earners was 4% lower than the 1914 level. In general, the employment problem in this industry has not been so serious as in many other basic industries.

Hours

The average hours of the *nominal week* were reduced from 54.2 in July, 1914 to 50 in June, 1920. The latter standard has been practically maintained throughout 1920 and the first half of 1921.

The *average hours of plant operation* showed a decline from 52.3 in July, 1914 to 51.5 in June, 1920. The depression period began to take effect in November, 1920 and became marked through the following months, reaching a trough in

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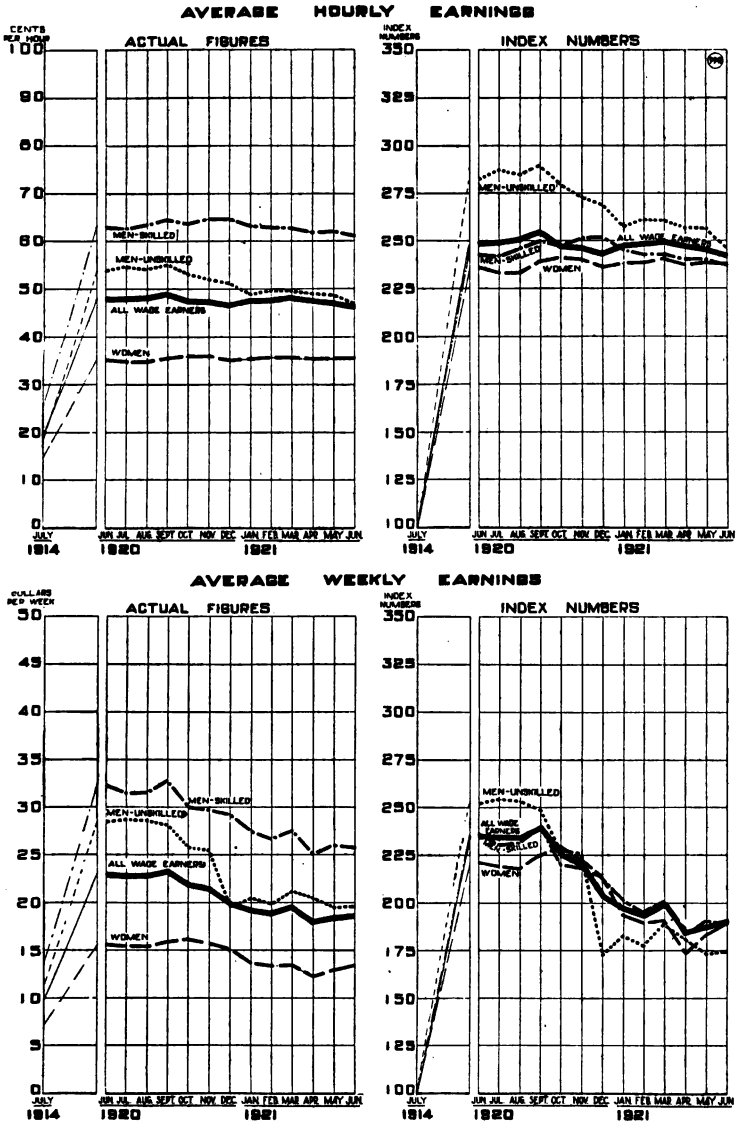

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
								Hrly.	Wkly.
1914									
July*	*5,041*	*5,041*	*50.9*	*52.3*	*54.2*	*$.192*	*$9.76*	*100*	*100*
1920									
June	6,760	8,176	48.0	51.5	50.0	.477	22.91	248	235
July	7,067	8,574	47.8	50.7	50.0	.478	22.82	249	234
Aug.	7,087	8,574	47.6	51.2	50.0	.480	22.84	250	234
Sept	7,140	8,640	47.7	50.4	50.0	.488	23.27	254	239
Oct	7,252	8,705	46.2	50.8	50.0	.475	21.97	247	225
Nov	6,682	7,978	45.3	49.5	50.0	.473	21.42	246	220
Dec.	6,605	7,654	42.7	45.3	49.9	.466	19.92	243	204
1921									
Jan	5,759	6,623	40.6	44.9	49.9	.474	19.22	247	197
Feb.	5,558	6,438	39.6	43.5	49.9	.476	18.85	248	193
March	5,384	6,113	40.6	43.8	49.9	.479	19.46	249	199
April	5,380	6,234	37.8	39.5	49.9	.475	17.98	247	184
May	4,979	5,885	38.9	41.3	49.9	.470	18.28	245	187
June	4,832	5,712	39.9	41.7	49.9	.464	18.52	242	190

*1914-1921 establishments only. See pp. 3, 5.

April, 1921 of 39.5 hours. May and June, 1921 witnessed a revival to 41.7 hours.

The *average week per wage earner* showed a decline from 50.9 hours in July, 1914 to 48 hours per week in June, 1920. Following the trend in the hours of plant activity, the depression period began to take effect in November, 1920. The following months reflected a similar tendency, the minimum of 37.8 hours being reached in April, 1921. May and June brought a revival.

In general, the trend of hours shows the effect of the economic depression, the productive conditions in this industry being well maintained through September, 1920 and undergoing a marked depression from December, 1920 to April, 1921. May and June, however, reflected slight stimulation.

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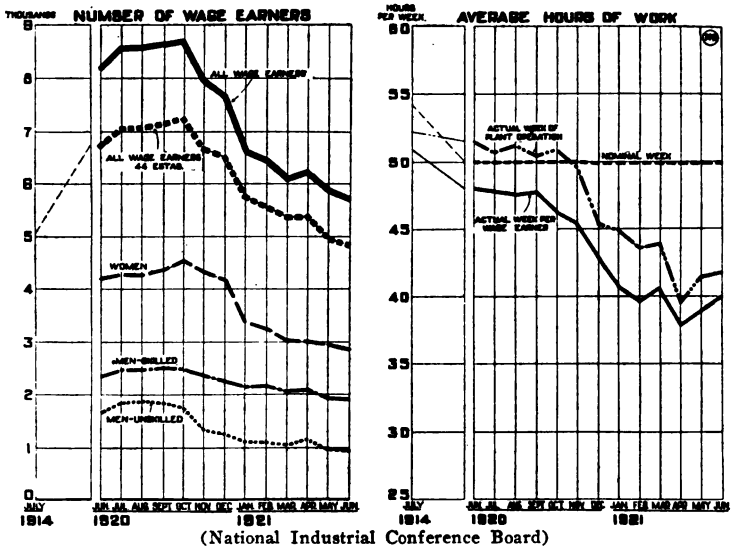

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Conclusion

1. The decline in hourly earnings has been slight in this industry as compared with the majority of basic industries.

2. Decrease in weekly earnings has been marked, due to reduction in hours worked during the depression period. The total decrease in employment has been extensive, the effects of the industrial depression not reaching the industry until well into 1921.

3. In general, the industry shows well sustained productive conditions in the summer of 1920, a depression period between November, 1920 and April, 1921, followed by a revival during May and June, 1921.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*784*	*59.4*	*$.190*	*$11.27*	*100*	*100*	*1,578*	*52.8*	*$.258*	*$13.63*	*100*	*100*	*2,679*	*47.3*	*$.149*	*$7.04*	*100*	*100*
1920																		
June	1,654	52.9	.536	28.35	282	252	2,339	51.3	.628	32.20	243	236	4,183	44.3	.351	15.55	236	221
July.....	1,859	52.4	.545	28.57	287	254	2,458	50.1	.625	31.33	242	230	4,257	44.4	.347	15.40	233	219
Aug.....	1,880	52.6	.541	28.49	285	253	2,457	49.6	.634	31.47	246	231	4,237	44.2	.347	15.34	233	218
Sept.....	1,841	51.0	.550	28.05	289	249	2,475	50.9	.644	32.74	250	240	4,324	44.5	.356	15.82	239	225
Oct.....	1,754	48.3	.531	25.68	279	228	2,461	47.2	.636	30.05	247	220	4,490	44.9	.359	16.10	241	229
Nov.....	1,320	48.9	.519	25.35	273	225	2,345	45.9	.647	29.71	251	218	4,313	43.9	.358	15.71	240	223
Dec.	1,259	38.2	.511	19.55	269	173	2,235	45.1	.647	29.21	251	214	4,160	42.8	.352	15.04	236	214
1921																		
Jan	1,111	41.9	.489	20.48	257	182	2,129	43.4	.632	27.41	245	201	3,383	38.4	.355	13.66	238	194
Feb.....	1,089	40.2	.495	19.90	261	177	2,131	42.5	.628	26.67	243	196	3,218	37.5	.355	13.31	238	189
March...	1,041	42.7	.496	21.21	261	188	2,047	43.7	.627	27.42	243	201	3,025	37.7	.357	13.46	240	191
April. ...	1,145	41.8	.489	20.44	257	181	2,082	40.4	.618	24.96	240	183	3,007	34.6	.353	12.20	237	173
May	979	40.1	.486	19.48	256	173	1,932	41.9	.619	25.95	240	190	2,974	36.5	.354	12.91	238	183
June	965	41.8	.468	19.58	246	174	1,904	42.1	.611	25.71	237	189	2,843	37.8	.353	13.34	237	189

*1914-1921 establishments only. See pp. 3, 5.

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XVII

PRINTING AND PUBLISHING

(Book and Job)

This wage investigation covers 355 establishments engaged in book and job printing, employing 22,752 wage earners at the high point in August, 1920. Women were employed in 307 of these establishments. The geographical distribution within 36 states and the District of Columbia is as follows:

Alabama	2	Montana	2
California	16	Nebraska	3
Colorado	3	New Hampshire	2
Connecticut	2	New Jersey	7
District of Columbia	3	New Mexico	1
Georgia	3	New York	59
Illinois	37	North Dakota	1
Indiana	9	Ohio	55
Iowa	5	Pennsylvania	19
Kansas	3	Rhode Island	3
Kentucky	4	South Carolina	1
Louisiana	1	South Dakota	3
Maine	2	Tennessee	8
Maryland	8	Texas	2
Massachusetts	24	Utah	3
Michigan	11	Virginia	8
Minnesota	11	Washington	6
Mississippi	1	Wisconsin	14
Missouri	13		

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* show an increase of 109% in the peak months of March, April and June, 1921. From June, 1920 up to July, 1921, there was an increase of 7.9% in hourly earnings. The general trend shows gradual increases during 1920 and a practically stationary condition during the first six months of 1921. Hourly earnings of *common labor* reached a peak in October, 1920, when they had increased 138% over 1914, and from the latter period up to July, 1921, they declined 5.2%, leaving a net increase of 126%.

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The hourly earnings of *skilled labor* attained a peak in December, 1920 and in March and June, 1921, the total increase in these months being 103% over 1914. The increase from June, 1920 up to July, 1921 amounted to 7.8%. The peak of hourly earnings for *women* was not reached until February, 1921, when there was an increase of 136% over 1914. Between June, 1920 and February, 1921, hourly earnings of *women* increased 7.8% and between the latter period and June, 1921, decreased slightly more than one per cent.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 109% from July, 1914 to October, 1920 and from the latter period up to July, 1921 declined 5.6%, leaving a net increase of 97%. The trend showed a gradual increase during 1920 to October, followed by a decided drop at the beginning of 1921, due to shorter hours worked.

The weekly earnings of *common labor* increased 138% from July, 1914 to June, 1920, those of *skilled labor* were 109% higher in October, 1920 and those of *women* 133% higher in December, 1920. The percentages of decline for the three groups from their respective peaks up to July, 1921 were: *common labor*, 14%; *skilled labor*, 6.5%; *women*, 8.8%. In the middle of June, 1921, weekly earnings of *common labor* were 105% above 1914, those of *skilled labor*, 95% and those of *women*, 113%.

Employment

The decline in the total number of wage earners from the high point in August, 1920 to June, 1921 was 23.5%. The drop in May, 1921 is accounted for by strike conditions existing in many of the plants during this month. It will be noted that the recovery from May to June did not cover the ground lost between April and May.

There was an increase of 21.2% in employment in identical establishments between July, 1914 and June, 1920. In June, 1921 employment in identical establishments was below that of the July, 1914 level. While the printing industry has not been so directly affected by economic conditions as have many manufacturing industries, the reaction from general business stagnation is shown by the reduction in employment particularly during 1921.

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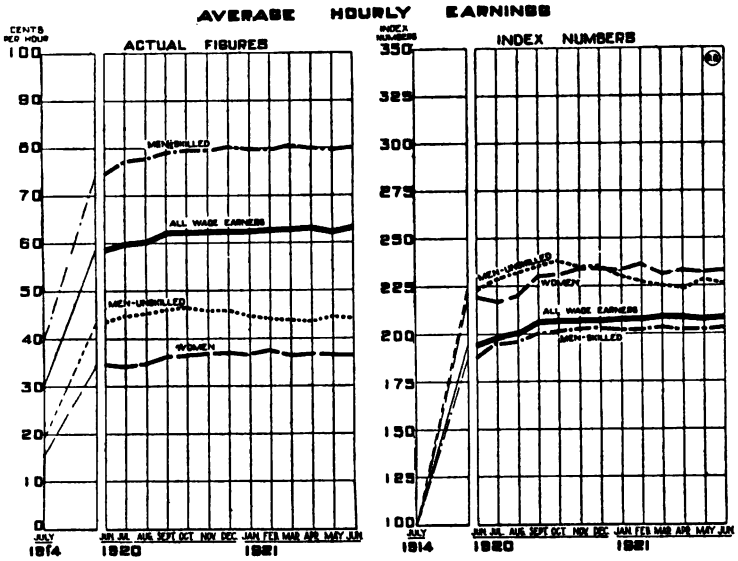

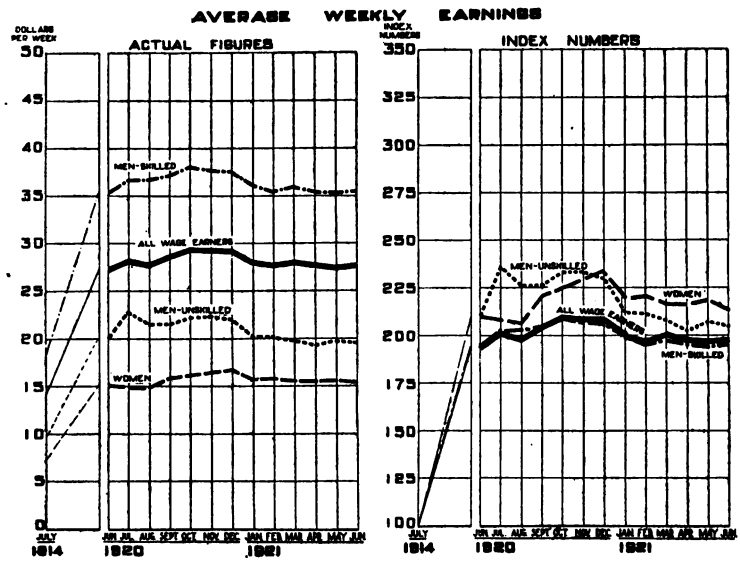

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings Hrly.	Index Nos. Earnings Wkly.
1914									
July*....	*13,151*	*13,151*	*46.5*	*49.0*	*49.0*	*$.301*	*$14.01*	*100*	*100*
1920									
June.....	15,944	22,346	46.4	49.2	48.3	.584	27.07	194	193
July.....	15,887	22,596	47.2	50.2	48.3	.597	28.18	198	201
Aug.....	15,979	22,752	46.2	49.0	48.3	.601	27.79	200	198
Sept.....	15,738	22,233	46.2	49.3	48.3	.619	28.57	206	204
Oct.....	15,770	22,198	47.0	48.9	48.3	.622	29.24	207	209
Nov.....	15,728	22,002	46.9	48.7	48.3	.623	29.17	207	208
Dec.....	15,516	21,621	46.7	47.9	48.3	.623	29.12	207	208
1921									
Jan.....	14,681	20,509	44.6	45.8	48.3	.625	27.90	208	199
Feb.....	14,233	19,806	44.1	45.8	48.3	.627	27.66	208	197
Mar.....	13,901	19,259	44.4	46.2	48.3	.629	27.95	209	200
April....	13,360	18,538	43.9	45.8	48.3	.630	27.65	209	197
May.....	12,148	16,982	44.1	45.7	47.7	.623	27.45	208	196
June.....	12,368	17,413	43.8	46.4	47.7	.630	27.60	209	197

*1914-1921 establishments only. See pp. 3, 5.

Hours

The average hours of the *nominal week* in July, 1914 were 49. In June, 1920, they were 48.3 hours. The latter standard was maintained up to May, 1921, when there was a fall to 47.7 hours. This decrease in the *nominal week* has been affected by the introduction of the 44-hour week in many of the printing establishments in the larger cities. As many of the plants covered in the investigation are from smaller towns and cities not affected by the 44-hour week movement, the decrease in hours here shown is not so marked as is probably the case in many establishments in the larger cities.

The *actual week of plant operation* amounted to 49 hours in July, 1914. In June, 1920, the hours remained practically the same—49.2 per week. There was little change during the remaining months of 1920, but at the beginning of 1921 there was a reduction to approximately 46 hours per week.

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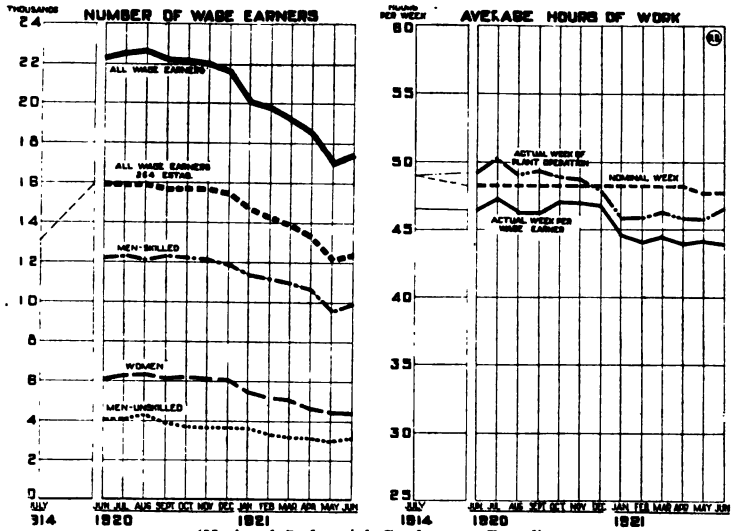

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This average has been maintained throughout the first six months of 1921.

The *actual week per wage earner* remained practically unchanged between July, 1914 and June, 1920. During the remaining months of 1920, there was a slight net increase in the average hours worked. However, in January, 1921 there was a fall of over two hours per wage earner, and the general level of 44 hours per week has been maintained. This reduction in hours has directly affected the trend of wages.

Conclusion

1. Reduction of working hours has caused an increase in hourly earnings and a decrease in weekly earnings. The peculiar conditions affecting this industry make wage comparisons difficult with those in many basic industries. The introduction of the 44-hour week in May, 1921, makes it difficult to show the real trend of conditions.

2. The total decline of almost 24% in employment shows that the industry has been affected by layoffs rather than by severe reductions in hours or wage cutting.

3. On the whole, the industry shows less decline in weekly earnings than practically any other basic industry covered by the investigation.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*.....	*2,340*	*49.0*	*$.195*	*$ 9.56*	*100*	*100*	*7,637*	*46.1*	*$.395*	*$18.20*	*100*	*100*	*3,174*	*45.8*	*$.157*	*$ 7.20*	*100*	*100*
1920																		
June.....	4,042	46.1	.435	20.05	223	210	12,218	47.7	.742	35.36	188	194	6,086	43.9	.344	15.10	219	210
July.....	4,024	51.0	.447	22.79	229	238	12,271	47.6	.771	36.72	195	202	6,301	44.0	.341	14.98	217	208
Aug.....	4,338	47.7	.452	21.57	232	226	12,121	47.4	.775	36.73	196	202	6,293	43.1	.345	14.84	220	206
Sept.....	3,883	47.0	.459	21.56	235	226	12,262	47.1	.788	37.10	200	204	6,088	43.9	.361	15.85	230	220
Oct.....	3,780	48.0	.465	22.29	238	233	12,221	47.9	.794	38.05	201	209	6,197	44.5	.362	16.10	231	224
Nov.....	3,735	48.8	.458	22.32	235	233	12,179	47.3	.796	37.62	202	207	6,088	44.8	.367	16.47	234	229
Dec.....	3,708	48.0	.459	22.00	235	230	11,902	46.9	.801	37.57	203	206	6,011	45.6	.368	16.79	234	233
1921																		
Jan.....	3,621	45.1	.449	20.28	230	212	11,412	45.2	.799	36.13	202	199	5,476	43.1	.366	15.79	233	219
Feb.....	3,410	45.5	.442	20.13	227	211	11,212	44.4	.798	35.43	202	195	5,184	42.7	.371	15.82	236	220
Mar.....	3,216	45.3	.438	19.84	225	208	11,036	44.8	.802	35.92	203	197	5,007	42.9	.363	15.58	231	216
April....	3,098	44.2	.437	19.35	224	202	10,686	44.4	.799	35.44	202	195	4,754	42.5	.366	15.55	233	216
May.....	2,998	44.4	.445	19.78	228	207	9,542	44.4	.796	35.35	202	194	4,442	43.0	.364	15.66	232	218
June.....	3,120	44.4	.441	19.59	226	205	9,891	44.5	.800	35.59	203	195	4,402	41.8	.366	15.31	233	213

*1914-1921 establishments only. See pp. 3, 5.

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XVIII

PRINTING AND PUBLISHING

(NEWSPAPERS AND PERIODICALS)

The wage investigation in establishments engaged in printing newspapers and periodicals includes 111 plants, employing at the high point in December, 1920, 3,920 wage earners. Women were employed in 63 of these plants. The geographical distribution within 34 states is as follows:

Arizona	1	Mississippi	1
California	6	Missouri	5
Colorado	1	Montana	1
Connecticut	2	Nebraska	1
Florida	2	New Jersey	1
Idaho	1	New York	9
Illinois	8	North Dakota	1
Indiana	2	Ohio	7
Iowa	12	Oklahoma	3
Kansas	4	Oregon	1
Kentucky	1	Pennsylvania	10
Louisiana	1	South Carolina	1
Maryland	1	Tennessee	1
Massachusetts	8	Texas	2
Maine	1	Virginia	2
Michigan	3	Wisconsin	6
Minnesota	4	Wyoming	1

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 76% from July, 1914 up to July, 1921. The period between June, 1920 and June, 1921, inclusive, was characterized by gradual increase in hourly earnings, amounting to 6.8%.

The high point of hourly earnings of *common labor* was reached in December, 1920 when there was an increase of 94% over 1914; by the middle of June, 1921, the hourly earnings of *common labor* dropped approximately 10%, leaving a net increase of 75% over 1914. The peak of hourly earnings of *skilled labor* was not reached until the middle of

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June, 1921, when there was shown an increase of 78% over 1914. The year 1920-1921 saw a continual increase amounting to 8.6%. The high point of hourly earnings for *women* was reached in November and December, 1920, when they were 122% above July, 1914. The decline up to July, 1921, was 2.8%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 82% from July, 1914 to December, 1920, and decreased 5% from the latter period up to July, 1921, leaving at that time a net increase of 73% over 1914 The trend shows a gradual increase through the months of 1920, reaching the peak at the close of the year, followed by very slight decreases during 1921, due to fewer hours worked.

The high point of weekly earnings for the male labor groups was reached in December, 1920. At that time, the weekly earnings of *common labor* were 110%, and those of *skilled labor* 85%, above 1914. The peak of 112% above 1914 for *women* was reached in November, 1920. The percentages of decrease for the three groups up to July, 1921 were as follows: *common labor*, 7.5%; *skilled labor*, 3.4%; *women*, 20.1%. In June, 1921 the percentages of increase over 1914 for the three groups were respectively 95%, 79% and 69%. The large drop in weekly earnings for *women* in June, 1921 is accounted for by a large reduction in the hours worked.

Employment

The total decrease in numbers of wage earners from the peak in December, 1920 up to July, 1921 was 4.8%. Between June, 1920 and December there was a slight increase in the numbers employed, amounting to about 8%. The problem of unemployment in this industry is relatively unimportant, as the industry has been little affected by general industrial stagnation.

The total number of wage earners in identical establishments increased 39% between July, 1914 and June, 1920. In the middle of June, 1921, the increase over July, 1914 was still larger, amounting to 40.3%.

Hours

The average hours of the *nominal week* in July, 1914 amounted to 50.3. Following a general reduction in the

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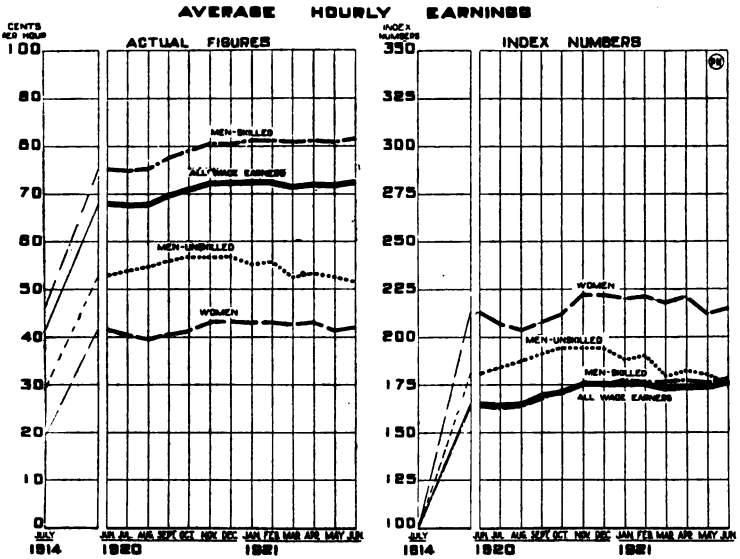

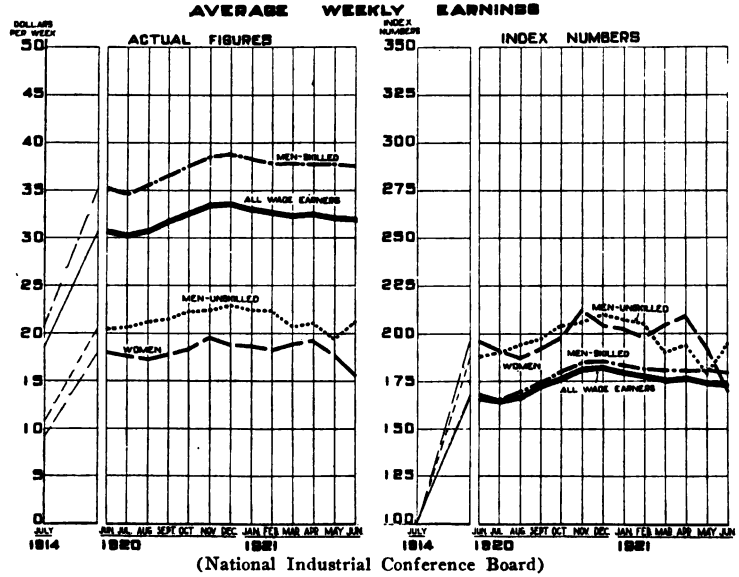

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Av. Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July* . .	*2,257*	*2,257*	*44.7*	*45.0*	*50.3*	*$.413*	*$18.44*	*100*	*100*
1920									
June . .	3,137	3,636	45.1	48.9	49.3	.680	30.66	165	166
July . . .	3,102	3,607	44.7	48.8	49.3	.677	30.28	164	164
Aug. .	3,288	3,787	45.3	48.6	49.3	.677	30.68	164	166
Sept . . .	3,227	3,744	45.5	48.9	49.3	.697	31.67	169	172
Oct. . . .	3,203	3,713	45.9	49.0	49.3	.708	32.52	171	176
Nov . . .	3,300	3,818	46.3	49.1	49.3	.721	33.40	175	181
Dec. . . .	3,412	3,920	46.4	48.6	49.3	.723	33.54	175	182
1921									
Jan. . . .	3,419	3,917	45.7	48.9	49.3	.723	33.03	175	179
Feb. . . .	3,383	3,882	45.1	48.5	49.2	.724	32.62	175	177
March .	3,385	3,890	45.2	48.9	49.2	.715	32.30	173	175
April . .	3,205	3,787	45.1	48.2	49.2	.720	32.48	174	176
May . . .	3,102	3,677	44.5	48.2	48.9	.719	32.02	174	174
June . . .	3,166	3,733	43.9	47.1	48.8	.726	31.87	176	173

*1914-1921 establishments only. See pp. 3, 5.

length of working hours during the war period, there was a decline to 49.3 hours in June, 1920. The latter standard was maintained through the following months until May, 1921, when there was a decline to 48.9 hours. This slight decrease is unquestionably caused by the introduction of the 44-hour week in some of the plants in the larger cities, but as many of the schedules in this group have come from small towns, the general effect on the present figures is unimportant.

The *average week of plant operation* increased from 45 hours in July, 1914 to 48.9 hours in June, 1920. The general average of the 48½ to 49-hour week was maintained through March, 1921. In April and May, there was a drop to 48.2 hours, followed by a further decline to 47.1 hours in June. Plant operation in the latter two months was affected by strike conditions existing in some of the plants.

The *average week per wage earner* increased from 44.7 hours in July, 1914 to 45.1 hours in June, 1920. There was a grad-

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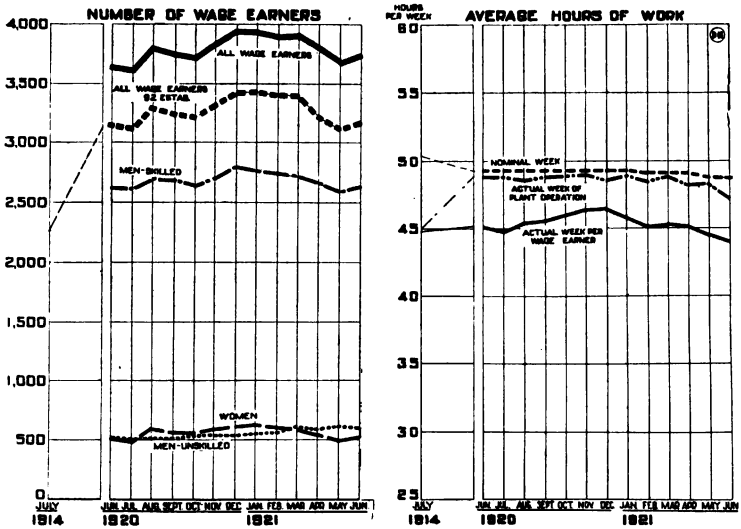

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ual increase during the following months in 1920, reaching 46.3 and 46.4 hours, respectively, in November and December, 1920. The beginning of the year 1921 was characterized by a decline, which was followed in May and June by further reductions. The whole trend of hours in May and June, 1921 was affected by peculiar conditions existing in this industry.

Conclusion

1. The increase in hourly earnings and the decline in weekly earnings were affected by reduction in the length of working hours.

2. The standard of hours was generally maintained throughout 1920 until April, 1921. The decrease in May and June, 1921, was due to labor conditions in some of the larger plants.

3. The effect of close organization in an industry in maintaining high wage levels during a time of widespread industrial depression is reflected by the investigation.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*257*	*37.2*	*$.293*	*$10.89*	*100*	*100*	*1,742*	*45.4*	*$.460*	*$20.92*	*100*	*100*	*258*	*47.3*	*$.195*	*$9.22*	*100*	*100*
1920																		
June	520	38.8	.529	20.50	181	188	2,612	46.7	.753	35.11	164	168	504	43.3	.416	18.03	213	196
July.....	505	38.5	.538	20.71	184	190	2,604	46.1	.749	34.55	163	165	498	43.6	.404	17.63	207	191
Aug.....	514	38.6	.547	21.13	187	194	2,687	47.0	.753	35.43	164	169	586	43.5	.397	17.26	204	187
Sept.....	511	38.4	.560	21.49	191	197	2,680	47.2	.773	36.49	168	174	553	43.6	.406	17.72	208	192
Oct	531	39.1	.568	22.22	194	204	2,631	47.6	.789	37.58	172	180	551	44.2	.413	18.24	212	198
Nov.....	544	39.6	.567	22.44	194	206	2,696	47.9	.805	38.59	175	184	578	45.2	.432	19.54	222	212
Dec.....	539	40.2	.569	22.90	194	210	2,782	48.2	.804	38.79	175	185	599	43.4	.432	18.76	222	204
1921																		
Jan.....	550	40.8	.551	22.49	188	207	2,756	47.2	.812	38.33	177	183	611	43.5	.429	18.62	220	202
Feb.....	553	40.1	.557	22.35	190	205	2,735	46.6	.811	37.82	176	181	594	42.4	.430	18.22	221	198
March...	601	39.4	.525	20.68	179	190	2,713	46.7	.808	37.73	176	180	576	44.2	.426	18.84	218	204
April.....	586	39.6	.533	21.12	182	194	2,659	46.4	.812	37.68	177	180	542	44.7	.430	19.25	221	209
May.....	602	36.9	.527	19.46	180	179	2,587	46.6	.808	37.64	176	180	488	43.0	.413	17.74	212	192
June.....	595	41.2	.514	21.19	175	195	2,621	45.8	.818	37.49	178	179	517	37.2	.420	15.62	215	169

*1914-1921 establishments only. See pp. 3, 5.

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XIX

LUMBER MANUFACTURING AND MILLWORK

The wage inquiry is confined to establishments, exclusive of sawmills, engaged in the manufacture of dressed lumber, sashes, doors and blinds, and general interior and exterior woodwork and trim. Schedules were received from 302 plants employing 12,900 wage earners at the high point in July, 1920. Statistics covering women were not compiled, as the number of female wage earners employed in this industry is negligible. Over 13% of the wage earners listed in the 1919 Census of Manufactures as then employed in this industry are included in this report. The average number employed per mill, according to the Census, is 19 wage earners; in these data, the average is 42. Therefore, while the number of establishments included in this report is small in comparison with the whole industry, the percentage of wage earners covered and the distribution and size of establishments may be considered as representative of the industry. The geographical distribution within 39 states and the District of Columbia is as follows:

Alabama	1	Missouri	11
Arkansas	2	Montana	4
California	12	Nebraska	5
Colorado	4	New Hampshire	4
Connecticut	6	New Jersey	7
District of Columbia	1	New York	23
Florida	4	North Carolina	2
Georgia	1	North Dakota	2
Illinois	13	Ohio	33
Indiana	8	Oklahoma	1
Iowa	6	Oregon	4
Kansas	2	Pennsylvania	36
Kentucky	6	Rhode Island	2
Louisiana	3	Tennessee	7
Maine	4	Texas	6
Maryland	4	Utah	2
Massachusetts	14	Vermont	3
Michigan	19	Virginia	5
Minnesota	7	Washington	5
Mississippi	1	Wisconsin	22

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Wages

(a) *Hourly earnings:* Composite hourly earnings of all *wage earners* show an increase of 132% from July, 1914 to October, 1920. The decline from the latter period up to July, 1921 was 12.1%. In June, 1921 the increase reached 104% over July, 1914. The high point was attained in the fall of 1920 and a gradual decline has marked the trend through June, 1921. The deflation in hourly earnings has been gradual and, in general, corresponds with levels in hourly earnings in most basic industries.

In October, 1920 the hourly earnings of *common labor* had increased 136%, and those of *skilled labor* 121% above 1914. The decline from October, 1920 up to July, 1921 amounted to 16.4% for *common labor* and 10.6% for *skilled labor.* In June, 1921 the percentage increases over July, 1914 for the two groups were respectively 97% and 98%.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 106% from July, 1914 to October, 1920 and declined 14.1% from the latter period up to July, 1921, showing a net increase in June, 1921 of 77% over July, 1914. The high point of weekly earnings, for both groups, was reached in October, 1920 when *common labor* was 124% and *skilled labor* 105% above 1914. From the latter period up to July, 1921, the decline was 20% for *common labor* and 11% for *skilled labor.* In June, 1921, percentage increases over July, 1914 for the two groups were respectively 80% and 82%.

The high point of wages for employees in planing mills was reached in October, 1920. The general flow of wages since that period has been steadily downward. A revival occurred in March, 1921, but was not sustained, the general economic depression continuously affecting wages up to July, 1921. The trend of wage reductions has been directly affected by the actual hours the groups have worked. Common labor has sustained by far the greater wage reductions, yet has worked more hours than skilled labor, the final figures of percentage increases over 1914 being practically the same for both groups. The trend of wage changes shows a peak in October, 1920, a marked decrease in the early winter of 1921, a rather distinctive revival in the early spring, followed by

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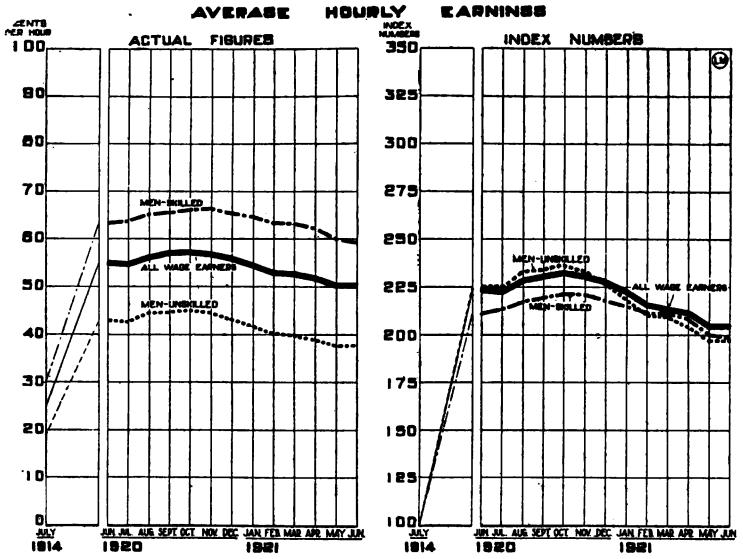

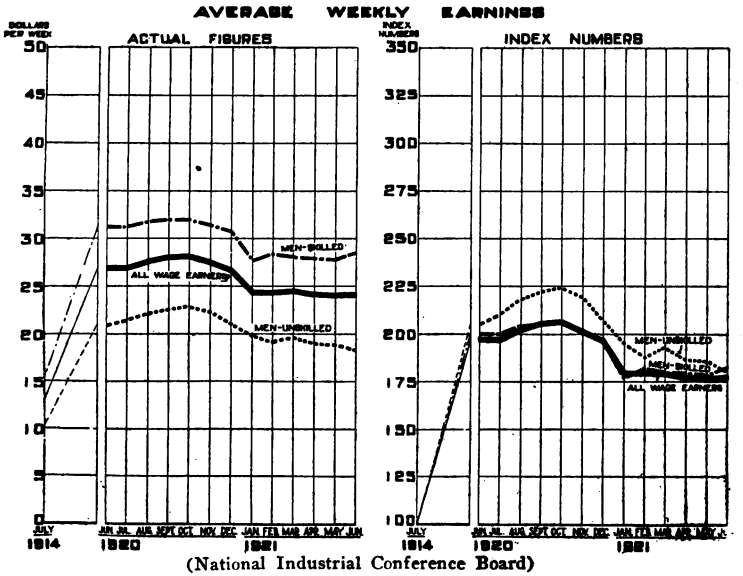

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Composite Payroll Data

Period	Number Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Actual Week Per Wage Earner	Actual Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July* ..	*11,064*	*11,064*	*52.5*	*53.2*	*55.6*	*$.246*	*$12.93*	*100*	*100*
1920									
June ..	9,315	12,006	48.9	52.8	52.4	.548	26.82	223	197
July ...	10,105	12,900	49.3	53.1	52.4	.545	26.87	222	197
Aug. ..	10,020	12,765	49.1	53.1	52.3	.560	27.54	228	202
Sept ...	9,641	12,348	49.4	52.4	52.3	.567	27.93	230	205
Oct....	9,208	11,760	49.3	52.1	52.3	.570	28.06	232	206
Nov ...	8,682	11,213	48.5	51.6	52.2	.566	27.44	230	201
Dec....	8,250	10,661	47.8	49.3	52.1	.558	26.65	227	196
1921									
Jan....	7,275	9,306	44.7	46.5	51.8	.545	24.38	222	179
Feb....	7,650	9,717	46.0	48.8	51.8	.529	24.36	215	179
March .	7,625	9,766	46.5	48.9	51.8	.525	24.40	213	179
April...	8,024	10,130	46.5	48.6	51.9	.518	24.09	211	177
May...	7,783	10,014	47.9	49.0	51.9	.501	24.01	204	176
June...	7,402	9,753	48.1	49.6	51.9	.501	24.10	204	177

* 1914-1921 establishments only. See pp. 3, 5.

a slump in the middle of the year. On the whole, the industry evidently was not affected by the depression until somewhat later than most basic industries. The early spring revival was unquestionably produced by the hope that there would be a stimulation in the building trades and in general construction and repair work, leading to large demand for the products of planing mills. This expectation, however, was not realized and a slump in the spring of 1921 occurred.

Employment

Total decline in employment from the high point in July, 1920 up to July, 1921 was 24.4%. There was a gradual decline in employment through 1920, followed by a marked drop in January, continued recovery through the spring months, and a slight slump in June, 1921. From the beginning of 1921 to the middle of the year the recovery from the

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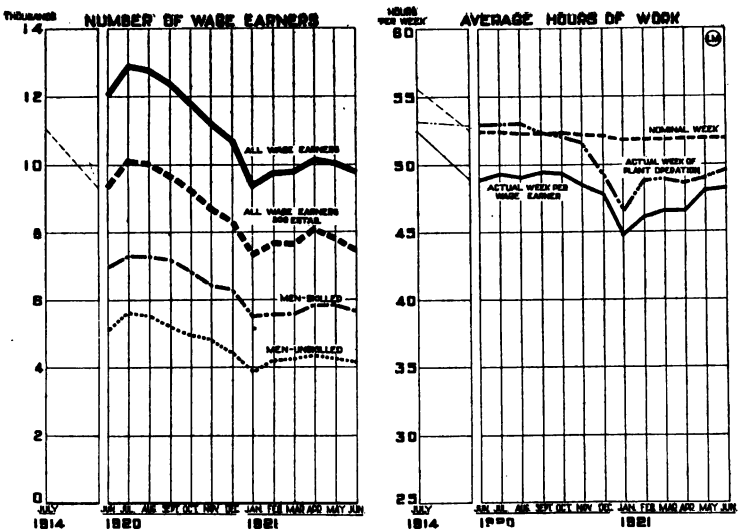

(National Industrial Conference Board)

depression period showed a 4.8% increase in total employment. In June, 1921 there were 33.1% fewer people employed in identical establishments than in July, 1914. June, 1920 marked a slight decline in employment in comparison with July, 1914. The whole industry during this period experienced only a slight growth, as comparison of the 1914 and 1919 Censuses of Manufactures shows. The industry being practically the same size in 1920 as in 1914, the comparison should rather be made between 1920 and 1921. If the industry had expanded even at the normal rate relative to the increase of population between 1914 and 1920, the decrease in employment from the high point in 1920 up to July, 1921 would not have appeared so distinctive. The loss in total numbers employed between June, 1920 and June, 1921 is, however, approximately an average decrease for most of the basic industries.

The fact that industry did not increase in size during the war period also has a direct effect on hours and wages. If there had been a particularly high demand for the products of this industry, there would have been unquestionably a faster increase in wages. The demand for planing mill products comes not only from building trades operations, or primary construction, but also from replacement and repair work, or secondary construction. The tendency toward decline in

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building trades operations has curtailed considerably the activity of planing mills, particularly in the months of 1921.

Hours

The average hours of the *nominal week* in July, 1914, were 55.6. In correlation with the general reduction of manufacturing hours during the war period, there was a reduction to 52.4 hours per week in June, 1920. This standard of hours was maintained practically throughout the rest of 1920, there being a slight decline in the months of 1921.

The trend of *actual average hours of plant operation* shows a reduction from 53.2 in July, 1914 to 52.8 in June, 1920. Plant activity began to decrease gradually in December, 1920, while the trough was reached in January. A marked revival, probably stimulated by the hope that building trades and reconstruction would start in the spring, started a steady and permanent recovery up to the middle of 1921.

The *average actual week per wage earner* showed a decline from 52.5 hours in July, 1914 to 48.9 hours in June, 1920. This decline in actual man hours is not so distinctive as in many other industries during this period. The general trend of actual hours per wage earner has followed the line of plant activity closely, the trough period occurring in the winter months of 1920-1921, at the same time as the depression in plant activity, followed by a marked recovery in the spring of 1921. In June, 1921 the average wage earner in planing mills was working nearly the full time that the plant operated. Indications are that there has been a recovery of productive efficiency on the part of the individual wage earner in 1921.

Conclusion

1. Decrease in wages has been gradual since the peak in the fall of 1920, except for slight stimulus in the early spring of 1921, due to the hope of a revival in building and construction work.

2. Wage declines in both hourly and weekly earnings indicate that the general wage reductions throughout American manufacturing industries up to July, 1921 had not vitally influenced conditions in this industry. The slight decline in weekly earnings is ascribable to the maintenance

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED					
One Week In	No. Wage Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Nos. Earnings		No. Wage Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Nos. Earnings	
					Hourly	Weekly					Hourly	Weekly
1914												
July*	*5,368*	*53.1*	*$.191*	*$10.15*	*100*	*100*	*5,696*	*52.0*	*$.299*	*$15.56*	*100*	*100*
1920												
June	5,061	48.4	.430	20.84	225	205	6,945	49.3	.632	31.17	211	200
July	5,614	49.7	.429	21.32	225	210	7,286	49.0	.636	31.14	213	200
August	5,509	49.7	.445	22.10	233	218	7,256	48.7	.650	31.67	217	204
September	5,186	50.3	.447	22.49	234	222	7,162	48.7	.655	31.86	219	205
October	4,947	50.5	.451	22.78	236	224	6,813	48.4	.660	31.90	221	205
November	4,815	50.0	.445	22.26	233	219	6,398	47.3	.662	31.33	221	201
December	4,416	48.9	.431	21.06	226	207	6,245	47.0	.651	30.60	218	197
1921												
January	3,815	47.5	.417	19.81	218	195	5,491	42.8	.644	27.56	215	177
February	4,175	47.6	.401	19.10	210	188	5,542	44.8	.632	28.32	211	182
March	4,208	49.1	.399	19.59	209	193	5,558	44.5	.630	28.04	211	180
April	4,316	48.7	.389	18.95	204	187	5,814	44.9	.621	27.91	208	179
May	4,204	50.2	.376	18.85	197	186	5,810	46.3	.599	27.75	200	178
June	4,115	48.4	.377	18.23	197	180	5,638	48.0	.592	28.38	198	182

* 1914-1921 establishments only. See pp. 3, 5.

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of practically full-time operation during 1920 and the first half of 1921.

3. The total employment declined 24% from the high point of 1920 through June, 1921. The decline seemed severe in view of the fact that the industry as a whole showed only a slight expansion in the years 1914-1921, inclusive.

4. The nominal week and the hours of plant operation declined from 1914-1920, following general reductions in hours throughout industry.

5. The hours worked by the individual wage earner closely follow those of plant activity, indicating, in the spring of 1921, a marked recovery of productive efficiency.

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XX

FURNITURE MANUFACTURING

The wage investigation in this industry includes establishments manufacturing wooden and upholstered furniture, and also a few plants engaged in cabinet work. A total of 166 establishments is covered, employing over 20,000 wage-earners in June, 1920. Women were employed in 92 of these plants. Approximately 13% of the wage earners listed in the 1919 Census of Manufactures as then employed in this industry are covered in this investigation. The majority of the returns came from the largest centers of furniture manufacturing. The geographical distribution within 27 states is as follows:

California	4	Montana	1
Connecticut	4	New Jersey	2
Georgia	2	New York	25
Illinois	9	Ohio	19
Indiana	17	Oregon	2
Kansas	1	Pennsylvania	15.
Kentucky	6	South Carolina	1
Maryland	3	Tennessee	1
Massachusetts	9	Texas	2
Missouri	4	Virginia	1
Michigan	21	Vermont	2
Maine	1	West Virginia	1
Minnesota	3	Wisconsin	7
North Carolina	3		

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* showed an increase of 150% in December, 1920 in comparison with July, 1914. The decline from the peak up to July, 1921 was 12.7%, showing a gradual fall about equal to the general decline of hourly earnings during this period. In December, 1920 hourly earnings of *common labor* were 182% above 1914, and those of *skilled labor* had increased 148%. The high point for *women* was reached in October, when hourly earnings had increased 141%. The percentages

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of decline from these various peaks up to July, 1921 for the three groups were: *common labor*, 14.8%; *skilled labor*, 12.2%; *women*, 12.9%. In June, 1921 the three groups showed respective increases over 1914, of 140%, 118% and 109%. The general level of hourly earnings was somewhat higher than in other industries.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* showed an increase of 142% from July, 1914 to September, 1920, and declined 15.3% from the latter period up to July, 1921. Weekly earnings were at the low point in the middle of 1921, as the result of gradual reduction. The high point of weekly earnings for the male group was reached in September, 1920, when *common labor* showed an increase of 159% and *skilled labor* an increase of 143% over 1914. The peak for *women* was reached in October, when an increase of 134% was shown. The declines from these various periods up to July, 1921 were: *common labor*, 14.2%; *skilled labor*, 15.4%; *women*, 19.5%. In June, 1921 the percentage increases over 1914 were respectively 122%, 105%, 89%. In general, reduction of wages has been gradual, the decline in weekly earnings being directly affected by the decline in plant activity.

Employment

The decline in the total number of wage earners employed from June, 1920 up to July, 1921 was 23.7%. The trough was reached in January, 1921, when there was a decline of 29.3% from June, 1920, followed by an increase to June, 1921 of 7.8%. Indications pointed toward a slight revival of industrial activity during 1921. The declines in employment for the three groups, between June, 1920 and June, 1921, were, for *common labor*, 22.2%, *skilled labor*, 22.7% and *women*, 33.8%.

Comparison of employment in identical establishments between July, 1914 and June, 1920 shows practically no change. In June, 1921, there were 19% fewer wage earners employed in plants than in July, 1914.

Hours

The average hours of the *nominal week* in July, 1914 were 55. A smaller decrease in working hours took place during

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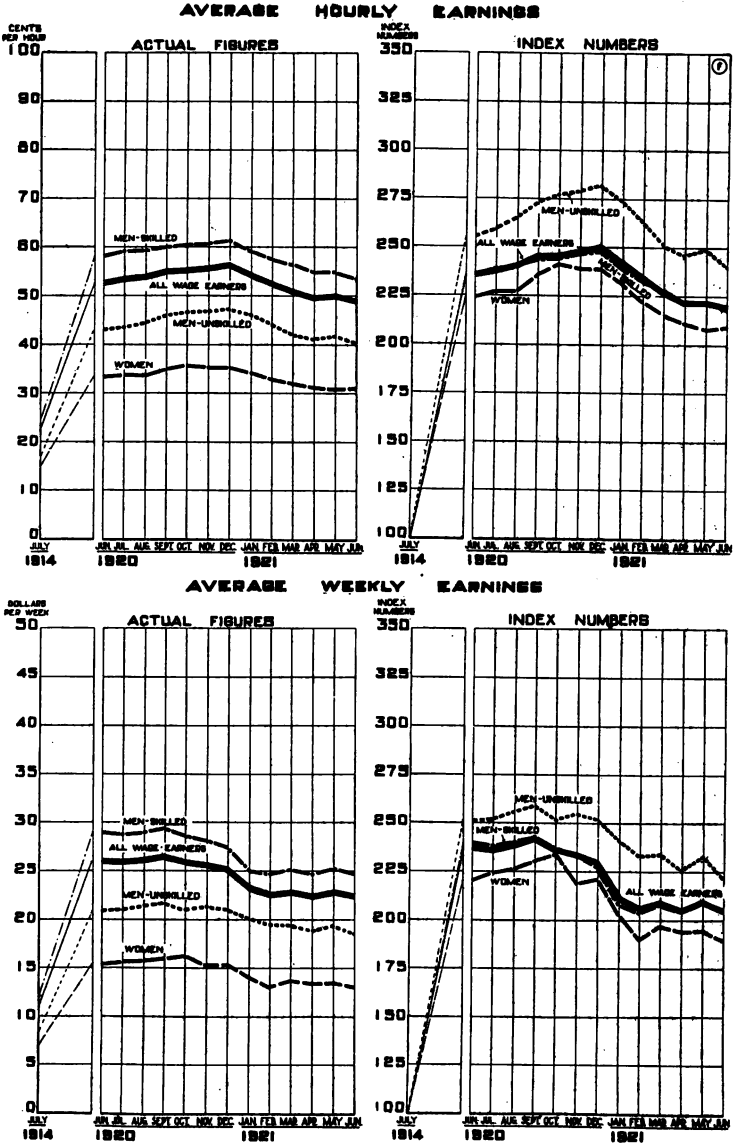

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours			Wages (All Wage Earners)			
								Index Nos. Earnings	
One Week In	1914-21 Establ.	Total All Establ.	Actual Week per Wage Earner	Actual Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*..	*14,140*	*14,140*	*49.0*	*51.5*	*55.1*	*$.224*	*$10.95*	*100*	*100*
1920									
June...	14,357	20,052	49.3	51.4	52.3	.526	25.91	235	237
July...	14,333	19,987	48.5	51.0	52.3	.534	25.88	238	236
Aug....	14,193	19,965	48.5	50.5	52.3	.538	26.08	240	238
Sept...	13,942	19,511	48.3	50.6	52.2	.549	26.49	245	242
Oct....	13,524	18,627	46.9	49.2	52.3	.552	25.87	246	236
Nov...	13,248	17,719	45.9	47.8	52.3	.556	25.51	248	233
Dec....	12,154	16,127	44.6	46.8	52.3	.561	25.05	250	229
1921									
Jan....	11,146	14,186	42.6	45.0	52.2	.542	23.10	242	211
Feb....	11,149	14,551	43.0	45.7	52.2	.524	22.52	234	206
March.	11,231	14,957	44.9	46.8	52.2	.509	22.85	227	209
April...	11,402	15,232	45.1	47.1	52.2	.497	22.40	222	205
May...	11,519	15,340	45.9	48.2	52.1	.498	22.89	222	209
June...	11,448	15,293	45.8	47.4	52.2	.490	22.45	219	205

*1914-1921 establishments only. See pp. 3, 5.

the war period than in many industries, there having been a general reduction to slightly under 52½ hours a week in June, 1920. The latter standard was maintained to the middle of 1921.

The *average week of plant operation* showed only a slight decrease from 51.5 hours in July, 1914 to 51.4 hours in June, 1920. Plant activity showed a slight decrease through September, followed by more severe reductions to the low point of 45 hours in January. There was a marked recovery of industrial activity during the following months of 1921, though production did not reach the standard of the preceding year.

The *average week per wage earner* was 49 hours in July, 1914. The summer months of 1920 showed an average of approximately 48 hours per week. The industrial depression, however, began to take effect in the late fall and continued through January, when a trough of 42.6 hours was reached.

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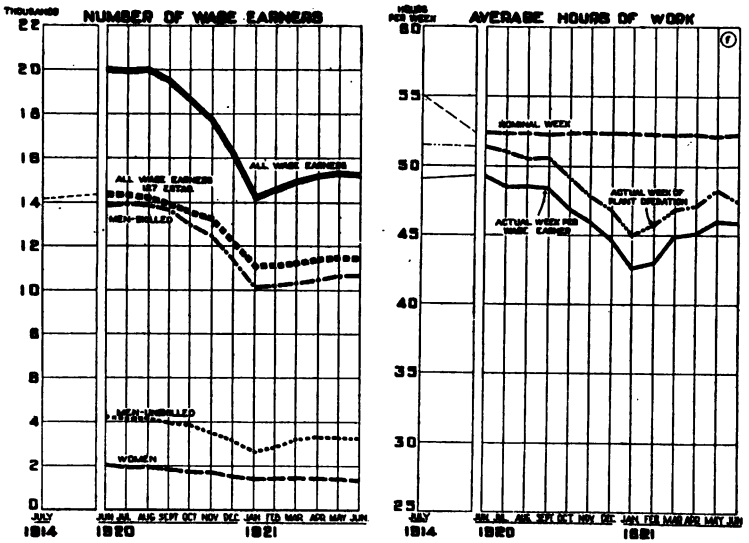

(National Industrial Conference Board)

As the recovery in plant activity increased, a similar revival affected the actual week per wage earner during the spring of 1921. The whole trend in hours presents a particularly good picture of an industry threatened by the industrial depression, though not so seriously as many other basic industries.

Conclusion

1. Decline in hourly earnings has been less than in the majority of basic industries, while the decrease in weekly earnings has been affected more by a reduction in working hours than by wage cutting. The general trend of wage reductions is in close sympathy with the movement in industry as a whole, outside of the metal and textile industries.

2. A decline in the total employment of 24% during the past year shows that the tendency has been to curtail working forces rather than to make severe wage reductions.

3. Industrial activity was maintained during the summer of 1920, slumped during the winter, and recovered in the spring months of 1921.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED						WOMEN					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.					Hrly.	Wkly.
1914																		
July*....	*3,058*	*49.8*	*$.168*	*$8.37*	*100*	*100*	*10,189*	*48.9*	*$.247*	*$12.08*	*100*	*100*	*893*	*47.3*	*$.148*	*$6.98*	*100*	*100*
1920																		
June.....	4,212	48.9	.429	20.98	255	251	13,815	49.8	.581	28.96	235	240	2,025	46.2	.332	15.36	224	220
July.....	4,167	48.5	.435	21.05	259	252	13,882	48.8	.590	28.76	239	238	1,938	46.6	.336	15.66	227	224
Aug.. ...	4,179	48.1	.445	21.40	265	256	13,843	48.8	.593	28.94	240	240	1,943	46.9	.336	15.76	227	226
Sept.....	3,982	47.2	.459	21.70	273	259	13,658	48.8	.600	29.31	243	243	1,871	46.2	.348	16.07	235	230
Oct	3,872	45.2	.466	21.08	277	252	12,977	47.5	.603	28.61	244	237	1,778	45.9	.356	16.35	241	234
Nov.....	3,534	45.5	.468	21.30	279	255	12,437	46.3	.607	28.14	246	233	1,748	43.1	.354	15.30	239	219
Dec.	3,163	44.6	.473	21.07	282	252	11,444	44.8	.613	27.43	248	227	1,520	43.7	.353	15.39	239	221
1921																		
Jan.....	2,643	43.7	.461	20.16	274	241	10,142	42.6	.590	25.09	239	208	1,401	41.4	.342	14.17	231	203
Feb.....	2,878	44.1	.443	19.53	264	233	10,214	43.1	.573	24.68	232	204	1,459	40.4	.329	13.28	222	190
March...	3,182	46.5	.421	19.58	251	234	10,317	44.7	.563	25.14	228	208	1,458	43.1	.319	13.76	216	197
April.....	3,311	45.8	.413	18.92	246	226	10,476	45.1	.548	24.73	222	205	1,445	43.4	.312	13.54	211	194
May.....	3,288	46.5	.418	19.47	249	233	10,619	46.0	.548	25.21	222	209	1,433	44.0	.308	13.57	208	194
June.....	3,279	46.2	.403	18.61	240	222	10,674	46.1	.538	24.80	218	205	1,340	42.5	.310	13.16	209	189

*1914-1921 establishments only. See pp. 3, 5.

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XXI

BRICK AND TILE MANUFACTURING

Wage data for this industry were received from establishments engaged in the manufacture of brick, tile and fire-clay products. The compilation includes 143 separate plants employing 7,715 wage earners in July, 1920. Statistics covering women have not been compiled, as the number of women employed in the industry is negligible. While the number of establishments and wage earners covered in this report is small in comparison with the whole industry, the source and type of establishments covered is representative. According to the 1919 Census of Manufacturers, the average number employed in brick and tile plants is 36 wage earners. In these data, the average number is 54 wage earners. The geographical distribution within 31 states is as follows:

Arkansas	2	Nebraska	4
California	7	New Hampshire	1
Colorado	1	New Jersey	3
Connecticut	2	New Mexico	1
Delaware	1	New York	6
Illinois	12	Ohio	26
Indiana	7	Pennsylvania	16
Iowa	17	South Dakota	1
Kansas	2	Tennessee	1
Kentucky	6	Texas	3
Maryland	2	Virginia	1
Massachusetts	5	Washington	1
Michigan	4	West Virginia	2
Minnesota	3	Wisconsin	2
Missouri	2	Wyoming	1
Montana	1		

The wage data show that the common or unskilled group was approximately twice as large as the skilled group. It will be noted, however, that the average hourly earnings of the unskilled class are not widely divergent from the skilled group. This is due to the fact that certain companies do not clearly distinguish between common and skilled labor. Many plants consider their entire force as common labor, outside of a few

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skilled overseers; others designate the whole group as skilled; the work performed by both groups is, however, essentially the same. The vagueness of occupational classification, therefore, prevents compilation of exact wage data.

The seasonal fluctuations, during the winter and early spring months, are clearly shown by this report. As there are no previous wage data available for comparative purposes, it is not known just how much the economic depression has sharpened the seasonal fluctuation during this period. Unquestionably, stagnation in the building trades and in the demand for products of the brick and tile industry has had direct effect upon plant operation.

Wages

(a) *Hourly earnings:* Composite hourly earnings for *all wage earners* showed an increase of 139% from July, 1914 to October, 1920. The decline from the latter period up to July, 1921 was 23.2%. In June, 1921, the increase was 84% over July, 1914. The general peak was reached in the early fall of 1920. A gradual decline followed up to July, 1921.

In October, 1920 hourly earnings of *common labor* had increased 147% and *skilled labor* 125% above July, 1914. The decline from the general peak in October, 1920 up to July, 1921 amounted to 24.6% for *common labor* and 18.8% for *skilled labor*. In June, 1921 the percentages of increase over July, 1914 for the groups were, respectively, 86% and 82%.

(b) *Weekly earnings:* Composite weekly earnings for *all wage earners* increased 135% from July, 1914 to October, 1920 and declined 25.7% from the latter period up to July, 1921, showing a net increase through the middle of June, 1921 of 75% over July, 1914. The high point in weekly earnings for both groups was reached in October, 1920, when *common labor* was 135% and *skilled labor* 138% above 1914. Gradual declines from the latter period through June, 1921 amounted to 26.2% for *common labor* and 23.7% for *skilled labor*. In June, 1921, the percentages of increase over July, 1914 for the two groups were, respectively, 73% and 82%.

Both weekly and hourly wages in the brick and tile industry have declined rapidly and show a closer return to prewar levels than in the majority of basic industries. However,

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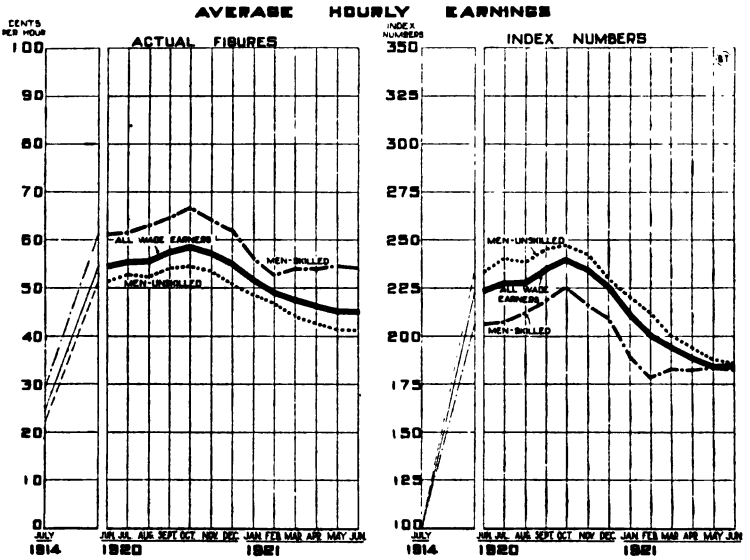

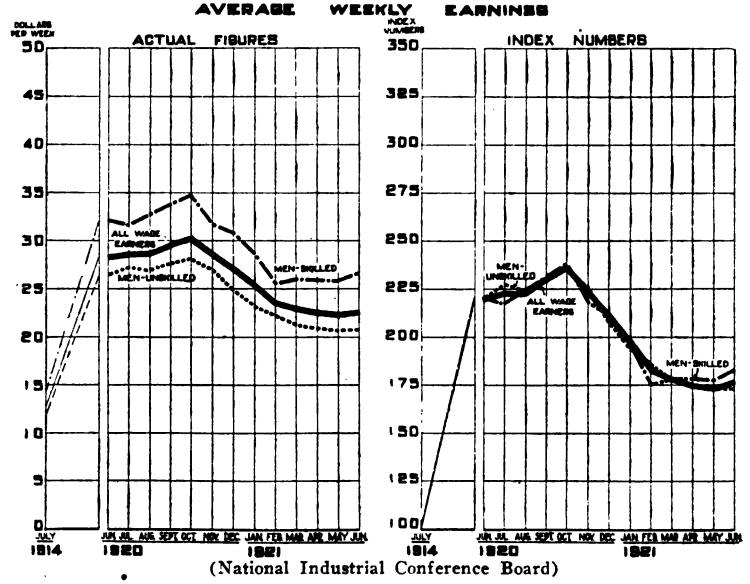

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Composite Payroll Data

Period	Numbers Employed		Average Weekly Hours			Wages (All Wage Earners)			
								Index No. Earnings	
One Week In	1914-21 Establishments	Total All Establishments	Actual Week Per Wage Earner	Actual Hours Plant Operation	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Hrly.	Wkly.
1914									
July*	*6,957*	*6,957*	*52.5*	*54.8*	*56.8*	*$.244*	*$12.82*	*100*	*100*
1920									
June	6,301	7,653	51.8	53.5	55.1	.543	28.13	223	219
July	6,442	7,715	51.5	52.9	55.1	.553	28.48	227	222
Aug.	6,193	7,606	51.4	52.9	55.1	.554	28.50	227	222
Sept	6,013	7,408	51.4	52.6	55.1	.572	29.41	234	229
Oct.	5,638	6,890	51.7	51.7	55.0	.583	30.12	239	235
Nov	5,070	6,190	50.1	50.3	55.0	.570	28.54	234	223
Dec.	4,325	5,227	49.2	48.4	54.9	.548	26.98	225	210
1921									
Jan.	3,358	4,033	49.0	47.2	54.9	.515	25.23	211	197
Feb.	3,302	3,974	47.9	47.0	55.1	.489	23.45	200	183
March	3,659	4,344	48.2	48.3	55.0	.474	22.83	194	178
April	4,574	5,258	48.6	48.9	55.1	.459	22.34	188	174
May	4,604	5,440	49.3	49.3	55.1	.450	22.16	184	173
June	4,432	5,252	50.0	49.8	55.1	.448	22.39	184	175

*1914-1921 establishments only. See pp. 3, 5.

in this connection three factors must be considered. In the first place, June, 1921 is a period just at the threshold of summer operations, when the brick and tile industry operates at its height. Weekly wages unquestionably rose in the full productive season in the summer months of 1921—a period not covered by these statistics. The second factor is the general stagnation of building trades, which resulted in substantial wage reductions and a large amount of part-time operation in the brick and tile industry. The third factor is the seasonal fluctuation, accentuated by the general economic depression, which would naturally reenforce tendencies toward wage reductions.

Employment

Total decline in employment from the peak in July, 1920 up to July, 1921 was 31.9%. The trend of employment

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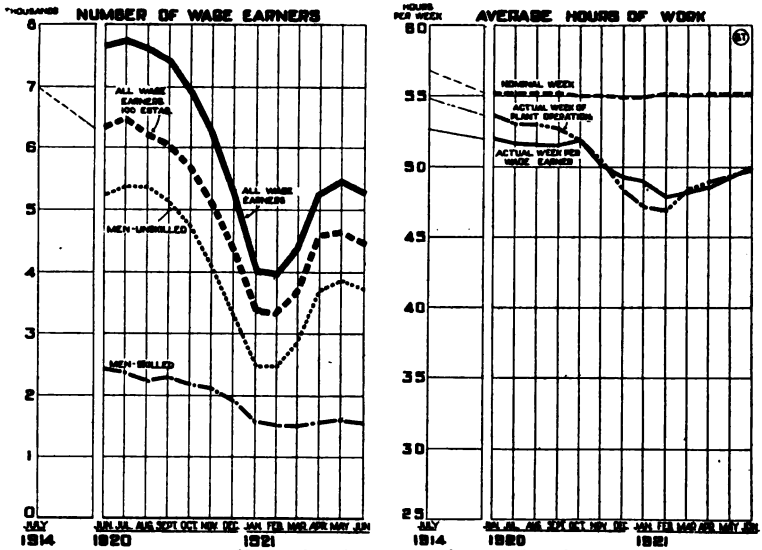

(National Industrial Conference Board)

shows a gradual decrease amounting, as a whole, to 48.5% from July, 1920 to February, 1921. The increase between February and June, 1921 amounted to 32.2%. The decline from July, 1920 up to July, 1921 in common labor amounted to 30.7%, and skilled labor declined 36.5% from June, 1920 up to July, 1921.

The decline in total employment from July, 1914 to June, 1920 was 9.4%. This followed the decrease of 12% in the total number of wage earners employed in the entire industry shown in the Census Reports of 1914-1919. In June, 1921 there were 36.3% less wage earners employed in identical establishments than in July, 1914. The decline in employment is due to the fact that the brick and tile industry was one of the few not especially stimulated by war demands, and to the general economic depression that has occurred since the general peak of business in 1920.

Hours

The average hours of the *nominal week* in July, 1914 were 56.8. From July, 1914 to June, 1920, there was a drop to 55 hours. This standard remained stationary until July, 1921. The brick and tile industry was less affected by the

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reduction of hours of the nominal or standard working week than almost any other industry covered in this investigation.

The trend of *average actual hours of plant operation* shows a reduction from 54.8 in July, 1914 to 53.5 in June, 1920. In October, 1920, there came a slight reduction in hours, followed by the general period of stagnation. The tremendous depression in the winter, reaching the trough of 47 hours in February, 1921, was due to the fact that many plants were entirely closed during these months. Thus, the average hours of plant operation for the whole group of establishments was naturally reduced, though the hours of plant operation for those still continuing to manufacture probably did not fall to such a great extent.

The *average actual hours per wage earner* showed a decline from 52.5 in July, 1914 to 51.8 in June, 1920. The level of 51½ hours a week was maintained through October, 1920, followed by the depression period in the winter months. The average of worker hours was sustained in comparison with the average of plant hours, due to the fact that the wage earners retained in plants that operated, maintained a fairly regular working week. In other words, plants in the brick and tile industry either shut down entirely, during the depression period, or operated on part-time production.

Conclusion

1. Decline in weekly and hourly earnings has been rapid, due particularly to the stagnation in building operations, municipal construction, and railroad maintenance.

2. The declines from the peak up to July, 1921 amounted to 23.2% in hourly earnings and 25.7% in weekly earnings.

3. The net increase in June, 1921, over July, 1914, amounted to 84% in average hourly earnings and 75% in average weekly earnings. While the amount of wage declines has been extensive, these net wage increases in June, 1921, are below those found in many other basic industries.

4. Decline in total employment for the industry has been marked throughout the entire seven-year period, due to the absence of war stimulation and the general economic depression during 1921.

5. The trends in the hours of the nominal week and in plant operation show only slight declines between July, 1914

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED					
One Week In	No. Wage Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Nos. Earnings		No. Wage Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Nos. Earnings	
					Hourly	Weekly					Hourly	Weekly
1914												
July*.....	*4,604*	*54.3*	*$.220*	*$11.94*	*100*	*100*	*2,353*	*49.2*	*$.296*	*$14.54*	*100*	*100*
1920												
June.....	5,228	51.4	.512	26.30	233	220	2,425	52.6	.610	32.05	206	220
July.....	5,355	51.4	.527	27.12	240	227	2,360	51.5	.613	31.57	207	217
August.....	5,349	51.2	.523	26.77	238	224	2,257	51.9	.628	32.61	212	224
September.....	5,112	51.1	.539	27.52	245	230	2,296	52.2	.644	33.60	218	231
October.....	4,705	51.5	.544	28.02	247	235	2,185	52.1	.665	34.64	225	238
November.....	4,063	50.4	.533	26.88	242	225	2,127	49.5	.640	31.69	216	218
December...	3,297	49.0	.507	24.80	230	208	1,930	49.7	.618	30.70	209	211
1921												
January	2,456	47.7	.485	23.13	220	194	1,577	50.9	.560	28.51	189	196
February	2,463	47.7	.466	22.21	212	186	1,511	48.4	.527	25.47	178	175
March	2,840	48.2	.440	21.21	200	178	1,504	48.2	.538	25.89	182	178
April...	3,696	48.9	.427	20.86	194	175	1,562	48.0	.538	25.83	182	178
May.....	3,853	50.1	.413	20.67	188	173	1,587	47.4	.543	25.76	183	177
June.....	3,711	50.4	.410	20.69	186	173	1,541	49.0	.540	26.44	182	182

* 1914-1921 establishments only. See pp. 3, 5.

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and June, 1920. The hours of plant activity decreased extensively through the early months of 1921. The actual week per wage earner also showed large declines influenced by the depression in plant activity, but was well sustained during a large part of the depression period, due to the fact that the wage earners retained in active plants were employed on full time.

6. The general situation in the industry has been marked by plant shutdowns rather than by reduction of working hours and part-time operation.

7. The general depression period in the industry occurred in the winter months of 1920-1921, accentuated by the regular seasonal fluctuation.

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XXII

GENERATION AND DISTRIBUTION OF ELECTRICITY

Wage data were received from 236 establishments engaged in the generation and distribution of electricity, employing 16,268 wage earners at the high point in December, 1920. Approximately 20% of all wage earners listed in the 1917 Census of Central Electric Light and Power Stations, were included in the investigation. The geographical distribution within 37 states is as follows:

Arizona	7	Nebraska	2
Delaware	1	North Dakota	1
California	21	New Hampshire	1
Colorado	4	New Jersey	2
Connecticut	6	New York	23
Florida	1	North Carolina	1
Georgia	5	Ohio	11
Illinois	22	Oregon	2
Indiana	9	Pennsylvania	25
Iowa	10	Rhode Island	1
Kansas	5	South Carolina	2
Kentucky	1	South Dakota	2
Maryland	2	Texas	5
Massachusetts	19	West Virginia	6
Maine	1	Vermont	2
Michigan	6	Washington	4
Minnesota	4	Wyoming	3
Missouri	2	Wisconsin	2
Montana	15		

As there is continuous operation in electric light plants, the emphasis in this wage investigation is placed on weekly earnings. The great majority of employees are either on a monthly or a weekly basis, although a percentage of common labor is paid on an hourly basis. The fluctuations in the composite returns in both hourly and weekly earnings are due in general to the common labor group.

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 105% from July, 1914 to November,

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1920, and from the latter period up to July, 1921, declined 4.6%, leaving a net increase of 96%. The trend shows an increase in hourly earnings to November, 1920, and a gradual decline since that time. The peak of hourly earnings for *common labor* in October, 1920 showed an increase of 111% over 1914. The peak of hourly earnings for *skilled labor* was reached in November, 1920, when there was shown an increase of 104% over 1914. The percentages of decline from these peaks up to July, 1921 were 8.1% for *common labor* and 4.1% for *skilled labor*.

In the middle of June, 1921, the hourly earnings of *common labor* were 94% higher than those of 1914, and those of *skilled labor*, 96%. The great decline in hourly earnings for common labor is in line with the general decrease in wages of common labor throughout basic industries.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 89% from July, 1914, to August, 1920, and from the latter period up to July, 1921 declined 4.1%, leaving a net increase of 81% over 1914. The general trend is affected slightly by the peaks in hourly earnings during this period, but in general, weekly earnings remained at a stationary level from June, 1920 up to July, 1921.

The peak of weekly earnings of *common labor* was reached in August, 1920, when they stood 86% higher than 1914, and for *skilled labor*, in October, 1920, when they were 95% higher than in 1914. The percentages of decrease for both groups up to July, 1921 were 14.3% for *common labor* and 3.4% for *skilled labor*. In June, 1921, the weekly earnings of *common labor* were 59% above 1914, and those of *skilled labor* 88%.

In general, the trend of wages in electric light plants has remained more or less stationary in 1920 and the first half of 1921. Hourly earnings show a net increase of 96% and weekly earnings an increase of 81% over 1914. The net increase is below the general level in the majority of basic industries.

Employment

The percentage of decline from December, 1920 up to July, 1921 was 12.7%. In general, the employment situation in electric light plants has been less affected by economic depression than in manufacturing industries.

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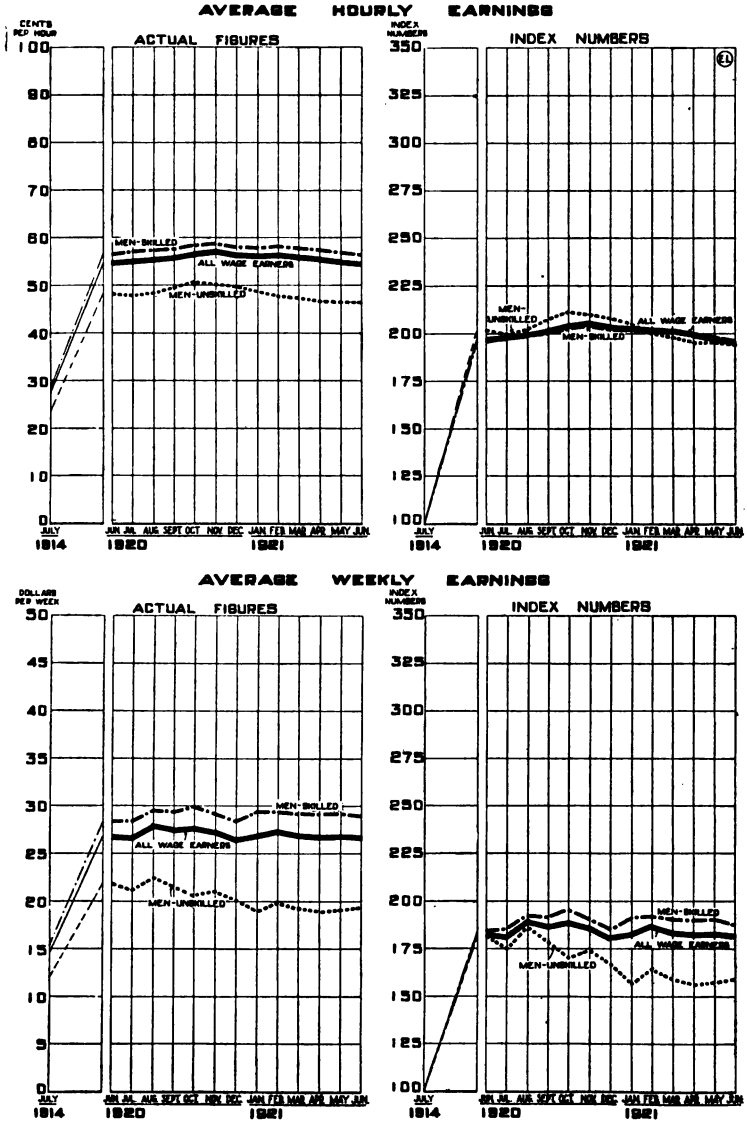

(National Industrial Conference Board)

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours		Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
							Hrly.	Wkly.
1914								
July*	*6,624*	*6,624*	*52.7*	*54.9*	*$.278*	*$14.68*	*100*	*100*
1920								
June	10,373	14,465	48.9	53.4	.547	26.72	197	182
July	10,697	14,819	48.1	53.4	.550	26.62	198	181
August	11,064	15,089	50.2	53.4	.554	27.79	199	189
September	11,071	15,229	49.0	53.4	.559	27.37	201	186
October	11,355	15,556	48.5	53.4	.567	27.54	204	188
November	11,416	15,817	47.7	53.4	.570	27.17	205	185
December	11,598	16,268	46.8	53.4	.564	26.40	203	180
1921								
January	10,402	14,843	47.7	53.4	.561	26.77	202	182
February	9,687	13,723	48.5	53.4	.562	27.27	202	186
March	9,682	14,011	48.1	53.4	.558	26.85	201	183
April	10,039	14,186	48.2	53.4	.554	26.69	199	182
May	9,997	13,966	48.8	53.4	.549	26.77	197	182
June	10,100	14,209	48.9	53.4	.544	26.64	196	181

*1914-1921 establishments only. See pp. 3, 5.

The increase in the total number employed in identical establishments was 56.6% between July, 1914 and June, 1920. In the middle of June, 1921, 52.5% more employees were engaged in identical establishments than in July, 1914.

Hours

The average hours of the *nominal week* decreased from 54.9 in July, 1914 to 53.4 in June, 1920. The latter standard remained unchanged up to July, 1921.

The *average week per wage earner* amounted to 52.7 hours in July, 1914. In June, 1920, the hours had decreased to 48.9. The fluctuations in working hours during the rest of the period up to July, 1921, are due principally to the varying amount of time worked by the common labor group. The hours of the skilled group averaged about 50 hours continuously.

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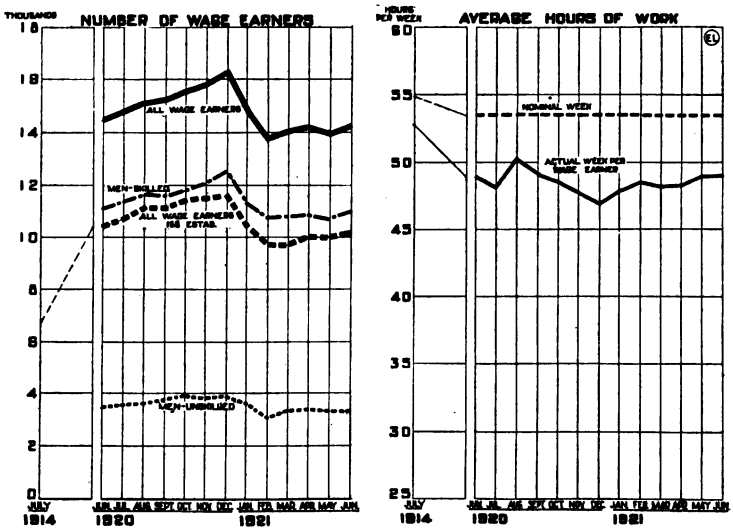

(National Industrial Conference Board)

Conclusion

1. The wage situation in electric light plants has been little affected by the general economic depression, as continuous operation in this industry tends to maintain production, the working force, and hours, up to the general normal level.

2. There has been a proportionately small decline in hourly earnings from the peak to the middle of 1921 as compared with manufacturing industries.

3. The decline in weekly earnings for common labor has been at a general level with that in many manufacturing industries, but the composite decrease in weekly earnings amounts to only 4%.

4. Employment in electric light plants has been little affected by the general economic depression, the total decline amounting to less than 13%. There has been a large expansion of the industry between 1914 and 1920.

5. There can be little comparison made between wage and employment conditions in electric light plants and, generally speaking, all public utility plants, and those of manufacturing establishments.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED					
One Week In	No. Wage Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Nos. Earnings		No. Wage Earners	Average Actual Hours	Average Hourly Earnings	Average Weekly Earnings	Index Nos. Earnings	
					Hourly	Weekly					Hourly	Weekly
1914												
July*	*1,318*	*50.6*	*$.239*	*$12.11*	*100*	*100*	*5,306*	*53.3*	*$.288*	*$15.32*	*100*	*100*
1920												
June	3,411	45.4	.482	21.86	202	181	11,054	49.9	.565	28.22	196	184
July	3,499	44.3	.479	21.17	200	175	11,320	49.7	.570	28.30	198	185
August	3,545	46.7	.483	22.53	202	186	11,544	51.3	.573	29.40	199	192
September	3,705	43.6	.495	21.56	207	178	11,524	50.7	.576	29.23	200	191
October	3,839	40.8	.505	20.60	211	170	11,717	51.1	.584	29.81	203	195
November	3,771	41.9	.502	21.03	210	174	12,046	49.8	.588	29.09	204	190
December	3,827	40.5	.498	20.17	208	167	12,441	48.8	.581	28.33	202	185
1921												
January	3,581	38.8	.489	18.94	205	156	11,262	50.5	.579	29.26	201	191
February	3,037	41.4	.479	19.85	200	164	10,686	50.5	.582	29.38	202	192
March	3,275	40.6	.474	19.23	198	159	10,736	50.4	.578	29.17	201	190
April	3,346	40.5	.466	18.88	195	156	10,840	50.6	.575	29.10	200	190
May	3,270	41.0	.465	19.07	195	157	10,696	51.1	.569	29.12	198	190
June	3,249	41.6	.464	19.30	194	159	10,960	51.1	.564	28.81	196	188

* 1914-1921 establishments only. See pp. 3, 5.

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XXIII

MANUFACTURE AND DISTRIBUTION OF GAS

The wage investigation in this industry covers establishments engaged in the manufacture and distribution of gas. Returns were received from 62 plants, employing 7,207 wage earners at the high point in August, 1920. Over 16% of the wage earners listed by the 1919 Census of Manufactures as then employed in this industry were covered in this investigation. The geographical distribution within 24 states is as follows:

California	2	New Jersey	2
Colorado	1	New York	9
Connecticut	3	North Carolina	1
Georgia	1	Ohio	2
Illinois	2	Pennsylvania	6
Indiana	1	Rhode Island	1
Kentucky	1	South Carolina	1
Maryland	2	South Dakota	1
Massachusetts	9	Vermont	3
Michigan	3	Virginia	1
Montana	1	Washington	1
Minnesota	3	Wisconsin	5

The chief importance of a wage inquiry among public utilities, which operate continuously, is to reflect the trend of weekly earnings. Hourly earnings are of little interest, due to the fact that there is continuous operation in gas plants and that most of the employees are either on a monthly or weekly basis. There is a good proportion, however, of common labor paid on an hourly basis and it is this group that is responsible for most of the variations in the trend of composite earnings. The chief worth of this study is to compare the general levels of wages in 1914 and 1920-1921.

Wages

(a) *Hourly earnings:* Composite hourly earnings of *all wage earners* increased 116% between July, 1914 and Septem-

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ber, 1920. The decline from the latter period up to July, 1921 amounted to 6.7%, leaving a net increase of 102% in June, 1921. The peak of hourly earnings for *common labor* was reached in November, 1920, when there was shown an increase of 160% over 1914, and in September, 1920 for *skilled labor*, when there was indicated an increase of 93% over 1914. The percentages of decrease from these peaks up to July, 1921 amounted to 11.8% for *common labor* and 4.1% for *skilled labor*. In June, 1921 hourly earnings of *common labor* were 129% over 1914, and those of *skilled labor*, 85%. The downward trend has been gradual throughout 1920-1921.

(b) *Weekly earnings:* Composite weekly earnings of *all wage earners* increased 114% between July, 1914 and October, 1920. The decline from the latter period up to July, 1921 amounted to 7.6%, showing a net increase of 98% in June, 1921. The data reflect a gradual decline during 1920-1921. The peak of weekly earnings for both *common* and *skilled labor* was reached in October, 1920, the former group showing an increase of 148% and the latter group an increase of 94% over July, 1914. From October, 1920 up to July, 1921, the percentages of decrease were: for *common labor*, 10.7% and for *skilled labor*, 6.1%. In the middle of June, 1921, *common labor* was still 122% above 1914 and *skilled labor*, 82%. The decrease in wages has been slight and far below that in most manufacturing industries. Wages have less tendency to change in a public utility, due to constant hours and freedom from conditions which in other manufacturing establishments tend to draw wages down.

Employment

The decline in the total number of wage earners from the high point in August, 1920 up to July, 1921 was 8.2%, a decrease substantially lower than that found in manufacturing industries. The peak for common labor was also reached in August, 1920; for skilled labor, the high point was in February, 1921. The percentages of decline from these peaks up to July, 1921 were 17.2% for common labor and 9.1% for skilled labor.

Between July, 1914 and June, 1920 there was a slight drop

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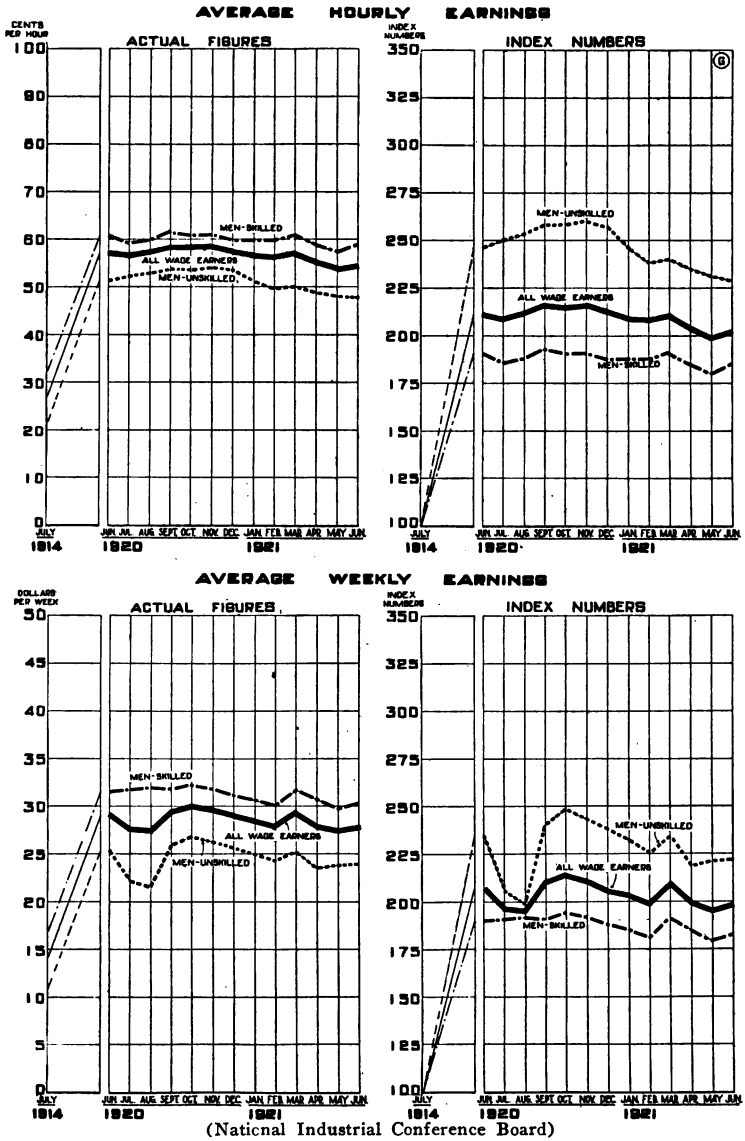

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Composite Payroll Data

Period	No. Wage Earners Employed		Average Hours		Wages (All Wage Earners)			
One Week In	1914-21 Establ.	Total All Establ.	Av. Week Per Wage Earner	Nominal Week	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings Hrly.	Index Nos. Earnings Wkly.
1914.								
July*	*6,495*	*6,495*	*52.0*	*63.3*	*$.270*	*$14.01*	*100*	*100*
1920								
June	6,369	6,517	50.9	59.3	.570	29.01	211	207
July	6,929	7,077	48.7	59.3	.565	27.51	209	196
August	7,049	7,207	47.7	59.3	.573	27.30	212	195
September	6,635	6,784	50.3	59.3	.584	29.37	216	210
October	6,962	7,104	51.8	59.3	.580	30.02	215	214
November	7,016	7,162	50.8	59.3	.583	29.59	216	211
December	7,000	7,140	50.5	59.3	.574	28.98	213	206
1921								
January	6,959	7,081	50.3	59.2	.565	28.43	209	203
February	6,857	6,975	49.7	59.2	.561	27.93	208	199
March	6,732	6,840	51.4	59.2	.568	29.23	210	209
April	6,845	6,974	50.5	59.2	.551	27.85	204	199
May	6,646	6,777	50.9	59.2	.537	27.33	199	195
June	6,497	6,618	50.9	59.2	.545	27.73	202	198

*1914-1921 establishments only. See pp. 3, 5.

in the total number of wage earners employed in identical establishments. In the middle of June, 1921 employment was at exactly the same level as in the same month seven years previous.

Hours

The average hours of the *nominal week* dropped from 63.3 in July, 1914 to 59.3 in June, 1920. The latter standard has been generally maintained up to July, 1921.

The *average week per wage earner* fell from 52 in July, 1914 to 50.9 in June, 1920. During the course of the year, there have been fluctuations in the average week per wage earner, due to the changes in the time worked by the common labor group. In May and June, 1921, the average hours per wage earner were identical with those in June, 1920. Changes in hours have not affected wages generally except for minor fluctuations among common labor.

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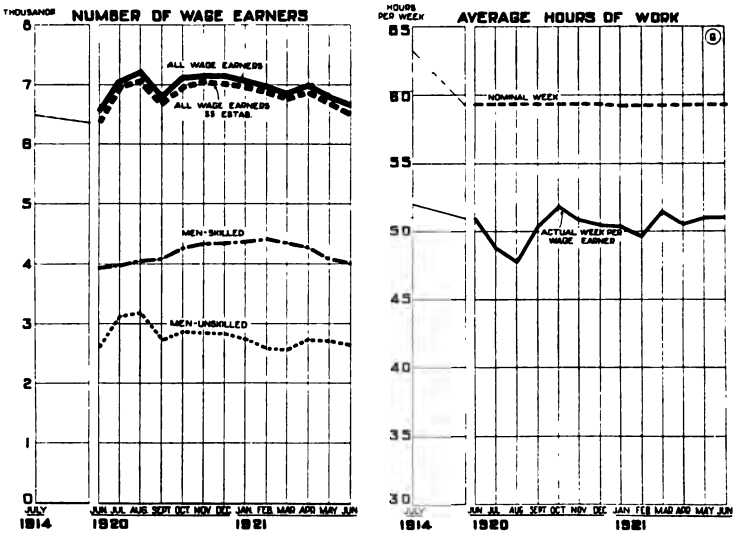

(National Industrial Conference Board)

Conclusion

1. The chief purpose of the wage investigation among gas plants is to compare the general level of the wages of 1920-1921 with that of 1914. The questions of hours and hourly earnings are of little importance.

2. The decline in weekly earnings was slightly over six per cent, being considerably below the level in manufacturing industries.

3. The decrease in total employment was very slight in comparison to general unemployment in basic industries.

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Classified Payroll Data

PERIOD	MALE UNSKILLED						MALE SKILLED					
One Week In	No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings		No. Wage Earners	Av. Actual Hrs.	Av. Hrly. Earngs.	Av. Wkly. Earngs.	Index Nos. Earnings	
					Hrly.	Wkly.					Hrly.	Wkly.
1914												
July*.....	*2,867*	*51.7*	*$.208*	*$10.77*	*100*	*100*	*3,628*	*52.2*	*$.318*	*$16.58*	*100*	*100*
1920												
June.....	2,580	49.4	.512	25.28	246	235	3,937	51.9	.606	31.46	191	190
July.....	3,103	42.5	.521	22.17	250	206	3,974	53.5	.592	31.69	186	191
Aug.....	3,154	40.6	.528	21.42	253	199	4,053	53.2	.599	31.88	188	192
Sept.....	2,701	48.1	.536	25.81	258	240	4,083	51.7	.613	31.73	193	191
Oct.....	2,853	49.9	.536	26.76	258	248	4,251	53.1	.607	32.21	191	194
Nov.....	2,824	48.4	.541	26.21	260	243	4,338	52.3	.608	31.80	191	192
Dec.....	2,807	47.9	.535	25.61	257	238	4,333	52.2	.598	31.16	188	188
1921												
Jan.....	2,722	48.9	.511	24.95	246	232	4,359	51.1	.598	30.60	188	185
Feb.....	2,569	48.9	.496	24.25	238	225	4,406	50.2	.598	30.06	188	181
Mar.....	2,520	50.4	.500	25.15	240	234	4,320	52.1	.607	31.60	191	191
April.....	2,702	48.1	.488	23.49	235	218	4,272	52.1	.588	30.61	185	185
May	2,692	49.5	.480	23.78	231	221	4,085	51.8	.572	29.66	180	179
June.....	2,613	50.1	.477	23.90	229	222	4,005	51.5	.588	30.24	185	182

*1914-1921 establishments only. See pp. 3, 5.

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